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EXPLANATORY NOTES

OF

INCREASES, DECREASES, AND CHANGES IN LANGUAGE

IN THE BUDGET FOR THE

DEPARTMENT OF AGRICULTURE

FOR THE

FISCAL YEAR ENDING JUNE 30, 1932

AND OF

WORK DONE UNDER EACH OF THE APPROPRIATION ITEMS

CONFIDENTIAL UNTIL THE 1932 BUDGET
IS SUBMITTED TO CONGRESS)

(SEE VOLUME 1 FOR INDEX
AND FINANCIAL STATEMENT)

BUREAU OF PUBLIC ROADS

(a) ADMINISTRATION

Appropriation, 1931.....	$ 70,500
Brookhart Act adjustments.....	760
Total, 1931.....	71,260
Budget, 1932.....	41,260
Decrease.....	$ 30,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Decrease
General Administration	69,999	71,260	41,260	30,000

The decrease of $30,000 in this appropriation is due to the transfer of that amount to the appropriation newly proposed in the Budget, for General Administration, Bureau of Agricultural Engineering.

Activities under this Appropriation

This appropriation is used largely for paying salaries of personnel in the organization units doing work of a general administrative nature.

(b) HIGHWAY INVESTIGATIONS

Explanation of change in language: The language submitted is recommended to provide for the consolidation of the former appropriation items for "Road Management Investigations", and "Road Building and Maintenance Investigations".

Appropriation, 1931 (combined total).....	$ 137,900
Brookhart Act adjustments.....	780
Total, 1931.....	138,680
Budget 1932.....	139,580
Increase.....	$ 900

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Highway Transportation Surveys	63,726	65,320	65,320		
Maint. of Experimental Hwys.	9,702	14,500	14,500		
Experiments in the use of local materials and road construction and maintenance studies	61,728	58,860	59,760		900
Totals	$ 135,156	$138,680	$139,580		$900

The increase of $900 is for under-average salary grade adjustments.

Activities under this Appropriation

Highway transportation surveys are being made to determine the present and expected future use of highway systems, which information forms the basis of planning programs of highway improvement. At the present time data is being analyzed which was secured during the course of a transportation survey lasting one year and covering the eleven Western States of Washington, Oregon, California, Idaho, Nevada, Arizona, Utah, Wyoming, Colorado, New Mexico and Nebraska. The field work was handled as a coordinated survey in cooperation with the State highway Departments. A similar survey is being conducted in Michigan.

The maintenance and study of experimental roads constructed by the Bureau of Public Roads in past years in the vicinity of Washington is being continued. There are approximately 98,000 square yards of road surfaces of various types involved.

The subgrade investigations which have been carried on for several years are being continued. The investigations have for their purpose the determination of the physical laws governing the behavior of soils and the identification of the soil constituents which exert a major influence on behavior; the determination of the extent to which soil characteristics are influenced by the soil constituents and the extent to which they are influenced by the natural conditions in which the soils occur; the development and standardization of tests which will permit a laboratory identification of soils and the development of methods for identifying and mapping subgrade soils in the field; the classification or grouping of soils with respect to their efficiency as subgrades and the correlation of this grouping with the existing classificatien which has been developed for agricultural purposes; and the determination of methods for correcting undesirable subgrade conditions. The work is carried on in cooperation with the Bureau of Chemistry and Soils and the State Highway Departments. Developments under this study have great value in connection with the location and design of highways and it is considered one of the most important of the physical researches of the Bureau.

Various treatments of sand-clay and top soil roads with bituminous materials have been made in cooperation with the State Highway departments. Different construction methods were used and careful records of maintenance costs are being kept. Work of this kind develops economical methods of construction and maintenance for low cost improvements on lateral roads where traffic is lighter than on the main throughfares.

(c) AGRICULTURAL ENGINEERING

This item is omitted under the Bureau of Public Roads. It is submitted for 1932 as a sub-appropriation of the proposed Bureau of Agricultural Engineering.

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Note - Also See Miscellaneous Section for "Federal Aid Highway System", "Mt. Vernon Memorial Highway," "Flood Relief, Vermont, New Hampshire, and Kentucky", "Flood Relief, Missouri, Mississippi, Louisiana and Arkansas," "Relief of the State of Alabama", and "Road and Bridge Flood Relief, Georgia and South Carolina."

BUREAU OF AGRICULTURAL ENGINEERING

Statement regarding a proposed bureau of agricultural engineering.

The 1932 estimates contemplate setting up as a separate bureau organization the agricultural engineering work now conducted by the Division of Agriculture Engineering of the Bureau of Public Roads.

From the standpoint of departmental organization, the agricultural engineering unit should function as a bureau coordinate with the other major units in the Department. All of the operations of the farm that involve the use of construction materials, labor, power, and machinery, as well as the improvement of the land by irrigation, drainage, and erosion control, lie at least partly in the field of engineering. They are subject to improvement by the same types of engineering investigation and analysis as have been the basis of marked economies in other industries. More and more the Department finds it necessary to call its agricultural engineering unit into its internal conferences on regional agricultural problems. To secure most effective coordination of effort and to avoid overlapping of research work, it is highly desirable that the unit devoted to the engineering phases be made coordinate with the other major sub-divisions.

In its relations with the State agricultural colleges and experiment stations, the Department could more adequately meet the demands made upon it for cooperation and leadership in research investigations that are of national or regional application if the agricultural engineering unit were established as a bureau. Forty of the State agricultural colleges now have established departments of agricultural engineering and the heads of those departments have expressed the conviction that the establishment of a bureau of agricultural engineering in the Federal Department of Agriculture would be of material advantage in maintaining cooperative relations. For several years the American Society of Agricultural Engineers has urged the establishment of such a bureau, and the recommendation has been widely supported by leaders in the agricultural field and by the agricultural press.

In the solution of many of the problems relating to farm buildings and to the effective use of machinery and power, it is advantageous to enlist the cooperation of commercial and other non-governmental agencies. In securing and maintaining such cooperation, a bureau will be more effective than a subordinate division.

Whatever the final solution of the difficulties now confronting agriculture, an important element will be the securing of greater operating efficiency--engineering efficiency which means increased ability on the part of the farmer to lower his costs of production, to store and process his surpluses, and to find uses for those products now classed as wastes. That being the case, it is highly desirable that in this emergency the Department of Agriculture include in its organization a strong agricultural engineering bureau which would complete a balanced departmental organization qualified to deal in a far-sighted manner with these problems.

(a) GENERAL ADMINISTRATION

Explanation of language: The language submitted is recommended to provide for the general administration of the Bureau of Agricultural Engineering. The $30,000 is transferred from the appropriation "General Administration, Bureau of Public Roads", which has been reduced by that amount.

Appropriation, 1931	-
Budget, 1932	$30,000

(b) AGRICULTURAL ENGINEERING INVESTIGATIONS

Explanation of language: The language submitted is recommended to provide for the investigational work of the Bureau, and involves continuation of the work formerly carried under the appropriation items for "Agricultural Engineering" Bureau of Public Roads, "Cotton Ginning Investigations.", the latter being carried as an item in the Second Deficiency Act, 1930.

Appropriation, 1931	$394,500
Allotment for Cotton Ginning Investigations.	65,000 *
Brookhart Act adjustments	1,380
Total, 1931	$460,880
Budget, 1932.	553,840
Increase.	$ 92,960

*Carried in Second Deficiency Act, 1930.

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Advice and Assistance.....	$33,331	$31,140	$31,140	-
Studies of the utilization and apportionment of water for irrigation and the organization, operation and maintenance of irrigation enterprises...	90,556	90,800	114,800	$24,000 (1)
Investigation of design, construction, operation and maintenance of drainage structures and the organization and development of drainage districts....	69,115	85,190	85,190	-
Studies of farm structures and their appurtenances	24,020	25,510	45,510	20,000 (2)
Studies of farm mechanical equipment.	43,628	144,290	198,250	53,960 (3)
Investigation of the storage and transportation of perishable products	5,170	5,100	5,100	-
Studies of farm land development.....	13,611	13,850	13,850	-
Rural electrification studies.....	-	-	5,000	5,000 (4)
Cotton ginning investigations.....	-	65,000	55,000	-10,000
Totals	$279,431	$460,880	$553,840	$92,960

While there is a net, or apparent increase of $92,960, due to a proposed reduction of $10,000, in the item for cotton ginning investigations, there is an actual increase of $102,960 in working funds as follows:

(1) $24,000 for expanding studies of the utilization and apportionment of water in irrigation and the organization, operation and maintenance of irrigation enterprises:

A. $10,000 for conducting in southern California, investigations of the water requirements of citrus trees in southern California for the purpose of determining definitely the relation between the time of irrigation and the amount of water applied, to the physical condition of the trees.

(a) The citrus growers of southern California are greatly concerned about the decline of the physical condition of their groves, more particularly as affecting lemons. Yields of groves which formerly were very productive are declining and the quality of the fruit is inferior. This conditon may be due to a number of causes, among which soil moisture and methods of irrigation are believed to be important. The situation merits the immediate attention and assistance of the Department. The information gained will be of general application to other citrus-growing areas.

(b) The plan of the Department will be:

To select a limited number of groves in southern California upon which experiments will be carried on. These will be given different irrigation treatments, careful record being kept of water applications, soil moisture, the setting of the fruit and its quality when ripened.

(c) Cooperation:

Studies relating to the condition of the trees and fruit will be made by the Division of Horticultural Crops and Diseases, Bureau of Plant Industry. The Division of Agricultural Engineering, Bureau of Public Roads, will conduct the engineering phases of these studies including the installation of irrigating equipment and structures, the measurement of water, etc.

B. $14,000 for carrying on investigations as to the duty of water and consumptive use of water in rotation experiments on irrigated crops at stations of Western Irrigation Agriculture; probably one in the Southwest and two in the Northwest.

(a) The scarcity of water available for irrigation in the West and the general agricultural economic conditions that prevail, demand

an investigation to determine the relation of crop rotation to the irrigation requirements of irrigated crops.

(2) $20,000 for expanding studies of farm structures and their appurtenances.

A. $12,000 for conducting investigations of dairy barn ventilation.

(a) It is generally recognized that the ventilation of dairy barns is as essential to the health of the animals as it is for human beings. The demand for clean, wholesome milk has made it necessary that each cow produce as much milk as possible. Breeders have developed the high-producing cow and have sought to obtain greater winter production. This requires tightly built barns provided with an efficient ventilating system so that an abundance of fresh air may be supplied without draft, and that the temperature of the barn be controlled and it kept dry.

In order to properly design a ventilating system it is necessary that we know the requirements such as the optimum temperature for maximum production consistent with the health of the animals and efficient use of feed; the critical temperature and the comfort zone of the cow; the amount of heat given off by the cows; the volume of air required per hour. With this knowledge there remains the problem of developing a system which will provide the desired air conditions at the least expense.

The designing of an efficient system is dependent upon a number of factors such as the efficient and economical use of insulation; the control of air current within the barn; the effect of wind pressure on the system.

The importance of the proper design of dairy barns is indicated by the fact that in 1928 the production of milk amounted to 60,000,000 tons. Dairy products account for 20 per cent of every American dollar spent for food. Any economy that can be brought about in milk production will have far reaching effect.

The project is a progressive one, each factor to be investigated under controlled conditions. The purpose of this proposed project is to determine the effect of volume of air space per head on temperature control. This has a bearing on the amount of insulation and ventilation required.

(b) The plan of the Department will be:

To conduct experiments in a barn in which all factors will be kept constant except that of volume of air space per head. The work will be done in one of the larger milk-producing States where decided winter temperature differences prevail. The location will depend upon arrangements that can be made. The results will be made available to all farmers, designers of dairy barns and manufacturers of ventilating equipment.

(c) Cooperation:

Cooperative relationships will be maintained with the Bureau of Dairy Industry with respect to the determination of the effect on production and health of cows; and with the State agricultural college with respect to making local arrangements, such as providing a suitable barn and furnishing part of the personnel or funds.

(d) Present work:

The Bureau has made a preliminary investigation to determine the relationship of the factors affecting the ventilation of barns and having an important bearing on the economical and efficient design of dairy barns. In line with the results of this work the Bureau is now arranging for an investigation of the influence of temperature fluctuations on milk flow and the optimum stable temperature for maximum production. It is expected that this work will be done in cooperation with the Bureau of Dairy Industry and the Wisconsin State agricultural college.

B. $8,000 for investigating the problems of trackside storage of white potatoes.

(a) Trackside storage of white potatoes in the potato-growing sections subject to low temperatures is attended by heavy losses due to improper construction of storages. Lack of insulation and adequate ventilation are the primary faults resulting in fluctuating temperatures and deposition of moisture on both potatoes and structure. The results are frozen and rotted potatoes in large quantities together with lowered quality of stock placed on the market. A large percentage of potatoes damaged in harvesting or harvested under favorable conditions and stored in poorly constructed houses develop rot. Heavy condensation on woodwork is conducive to rapid deterioration of the structure.

For the best results potatoes should be stored at a temperature of approximately 38° and a relative humidity of about 85 per cent. Control of the air conditions within the storage can be had only by tight construction, insulation, and an efficient ventilating system which will circulate the air through the potatoes in all parts of the storage. The purpose of this project is to study the control of air conditions in such storages and to develop methods of construction and management which will give the desired result at a minimum increased construction cost.

The loss of potatoes attributable to improper storage is not definitely known but reports from a number of individual operators indicate storage losses due to all causes ranging from 5 to 50 per cent depending upon the season and the condition of the stock when offered for storage.

(b) The plan of the Department will be:

To conduct simultaneous invegtigations in two storages of comparable size one of which will be of the type now in common use and the other new or reconstructed along lines designed to produce the desired results. The work will be done in one of the largest producing States and where severe low temperatures are encountered. The comparative findings will be made available to operators of storages. The results will be generally applicable to all potato growing areas although in milder climates and where differences in storage practices obtain, modification of methods may be necessary.

(c) Cooperation:

Anticipated cooperative relationships will include: (1) the Bureau of Plant Industry in determining the condition of the stock when stored, during storage, and upon removal; (2) the State Agricultural Experiment Station; (3) a commercial operator or owner who will agree to the use of two of his storages, the one to be remodeled at the Department's expense.

(d) Present Work:

At the present time no work is being done by the Bureau on the subject of storages for potatoes, but preliminary experiments conducted during the storage seasons 1925-6 and 1926-7; both seasons being favorable to storage, indicated that storage losses may be considerably reduced, particularly when harvesting conditions are unfavorable.

(3) $53,960 for expanding the investigations in the field of farm mechanical equipment directed toward lowering the costs of production.

A. $9,000 for expanding the study of fertilizer distributing machines.

(a) Present combination machines for applying fertilizer and planting seed simultaneously for various crops differ greatly in the manner of applying the fertilizer in relation to the seed and in the irregularity of fertilizer distribution, resulting in injury to germination and decreased yields in most instances, Fundamental information on the various methods of applying fertilizer is necessary before recommendations can be made on improved designs and standardization of machines. There are no machines at present on the market suitable for work which requires accurate and positive control of the application rate, uniform distribution, and accurate placement of the fertilizer in relation to the seed.

(b) The plan of the Department will be:

To expand present studies on machine application of fertilizers for cotton in South Carolina; to enlarge the experiments on methods of applying fertilizers as a side dressing for cotton; to enlarge the general study of fertilizer placement for cotton in eight principal cotton-producing States, to include other phases of fertilizer application; to expand the studies of fertilizer placement for beans in Florida to include all phases of the problem of mechanical application of the fertilizers and to conduct similar studies on other truck crops; to enlarge the work on canning crops in New York to include all phases of the mechanical application problem; to undertake studies of the mechanical application of fertilizers to a major crop such as potatoes, hay or small grain, in representative sections of the country; to develop suitable machines for accurately controlling various conditions to meet the requirements of all above-mentioned studies; to conduct various tests in the laboratory on the fertilizer distributors under development and other commercial machines; to design and test in the laboratory and field various attachments and appliances which may become a part or related to fertilizer distributing machinery; and to conduct further investigations on the operation of different types of fertilizer distributors as affected by the physical characteristics of the fertilizer.

(c) Cooperation:

Cooperation will be with two divisions in the Bureau of Chemistry and Soils who will prepare fertilizers and take records on the growing crop; ten State Experiment Stations who will provide the land and common labor, and record measurements on the crop; the Joint Committee on Fertilizer Application who will furnish certain fertilizers and provide a representative to assist with the supervision of the work; and machinery manufacturers who will supply certain types of machines.

(d) Present Work:

Studies on mechanical application of fertilizers for cotton will be conducted in the present fiscal year at Florence, Columbia and Clemson College, South Carolina. These are primarily, studies of placement of the fertilizer in relation to the seed as affecting germination, early bloom and yield. Some attention has been given to the effects of irregular distribution, concentration and different particle sizes of the fertilizer. Other sub-projects are:

Studies on methods of applying side-dressing materials to cotton, conducted at Florence, South Carolina; studies of eight placements of fertilizer in relation to the seed for beans, to be conducted at Fort Lauderdale and Fort Pierce, Florida; study of various placements at planting time of fertilizer in relation to the seed for cotton at one or more locations in the following States: North Carolina, Tennessee, Mississippi, Arkanaas, Oklahoma, Texas, Louisiana, and Georgia; study of fertilizer placement for beans and sweet corn at Geneva, New York; construction of two experimental combination fertilizer distributing and cotton planting machines to meet the requirements of a large part of the fertilizer experimental work in connection with cotton; construction of a laboratory building.

B. $8,000 for investigating the use of machinery and power in growing cotton:

(a) Cotton is the principal cash crop of the southeastern States. As the result of the limited area of cotton production per man and with the gradually decreasing yields per acre that are taking place, the production per man is very low. Under the usual small scale method practiced in the southeastern States, approximately two-thirds of the cost is expended for power, labor and machinery. It is evident that the greatest hope of the individual cotton grower lies in getting more cotton per acre of labor and other expense. It is proposed to determine the fundamental requirements which equipment must meet for machine methods of production, as a basis for the designing of such equipment as will lower the cost of cotton production.

(b) The plan of the Department will be :

To conduct field studies in cooperation with such southeastern States as are interested. The work will consist of carrying out a number of sub-projects dealing with various phases of the problem. Each State will cooperate with the Department in respect to such projects as touch upon the most serious problems in that State. Investigation will be in the nature of both field and laboratory studies.

(c) Cooperation:

Cooperation will be with the agricultural experiment stations of such southeastern States as may be interested, each State furnishing certain facilities, equipment and labor for such sub-projects as are conducted in that State.

(d) Present Work:

At the present time some work preliminary to the cotton-machinery project is under way, chiefly in the nature of enlisting the interest of the various States in attacking the problems that affect them particularly.

C. $10,000 for conducting in southern Louisiana researches looking to the development of a harvester for sugar cane.

(a) Harvesting of sugar cane is one of the most expensive items entering into the production of sugar. As now done it requires the greatest amount of labor of any operation in producing cane, and the plantation owner is forced to plan his work so as to keep sufficient labor available to meet his needs. The development of a satisfactory cane harvester would permit the reduction of the amount of labor needed on the plantation and would make practicable the introduction of other equipment which would lower the cost of production. This problem has been studied intermittently for many years and it is believed that if a practicable machine could be developed its effect upon the sugar industry would be such that the Department is warranted in undertaking this investigation.

(b) The plan of the Department will be:

To design, build, and test an experimental cane harvester at the Department's field station at Houma, Louisiana.

(c) Cooperation:

The Bureau will undertake the development of the cane harvesting machine. There will be informal cooperation from the specialists of the Bureau of Plant Industry and the sugar cane growers in southern Louisiana.

D. $8,000 for developing machinery for use in sugar-beet production:

(a) A large amount of hand labor is at present required in the production of sugar beets. Hand labor costs for thinning, hoeing and topping alone range from $23.00 to $26.00 per acre. The development of suitable machinery for more economical production and the reduction of hand labor in growing sugar beets has not kept pace with similar developments for other important crops.

According to the 1923 Tariff Commission's report, labor and machinery costs comprise 68.5 per cent of the total production costs, or $58.86 per acre, with man labor as the largest item. It is in this phase of production that there is an opportunity for material reduction in costs by the development of suitable machinery. At the present time satisfactory machines are not available for the blocking, thinning, topping, harvesting and loading of sugar beets. Improvement is also needed in the seeding, fertilizing and cultivating equipment.

(b) The plan of the Department will be:

Field headquarters will have been established at a central location with respect to sugar beet areas, where shop and laboratory facilities will be available to construct special machines and attachments, and conduct the necessary laboratory tests.

Sugar beet drills alone and in combination with fertilizer distributors will be redesigned and tested under various conditions for (1) more positive and uniform distribution of the need; (2) planting the seed in distinct hills; (3) more uniform depth of planting; and (4) proper location of the fertilizer with respect to the seed.

Studies will be conducted on blocking and cross-cultivation of sugar beets in California, Colorado and middle-western areas, as to the advisability of the practice and the most suitable equipment. Special blocking machines and cultivators with various tools - both standard and newly developed - will be used.

The harvesting of sugar beets will be studied in all its phases in representative areas, including California and Colorado. The machines on the market and those under development will be carefully studied from the standpoints of design, construction and operation and the quality of work done and costs as compared to prevailing methods which are largely hand labor.

The redesigning of promising machines and the construction of attachments will then be undertaken.

(c) Cooperation:

Cooperation will be with three or more State experiment stations which will furnish laboratory facilities and assist with different phases of the work; with certain sugar companies who will place their experimental machines and some engineering service at our disposal; and with machinery manufacturers and private concerns who will submit their experimental machines for testing and study.

(d) Present Work:

A comprehensive survey and study of the farm practices, hand labor operations, efficiency of the various types of machines in use, practicability of experimental machines, and the demand for new machines, are being conducted in all the principal sugar-beet producing areas.

Investigations of operations involving the use of seeding, cultivating, and harvesting machines are being organized. Records on the growing and harvested crops under certain practices are being taken at various points.

E. $14,000 for conducting in the corn belt investigations of the machinery used in the production of corn for the purpose of developing equipment and methods which will lower the cost of producing corn.

(a) Labor requirements for producing corn vary from less than five to over 300 man-hours per acre. It is known that by improving the equipment and practices now used that a material reduction in the cost of producing corn can be effected. Corn is an important crop over most of the United States and the development of methods of producing corn more cheaply will beneficially affect a large percentage of the farmers in the United States.

(b) The plan of the Department will be:

To study different kinds of available equipment as to efficiency, economy, and adaptability in representative geographical sections and under various conditions; to study the practicability of newly developed combination machines such as ensilage harvesters, corn pickers and combines, to determine the requirements of improved machines in sections to which present power machinery is not well adapted; and to combine, and redesign machines in the development of improved methods of corn production.

(c) Cooperation:

On this project there will be cooperation with the divisions of agricultural engineering at State agricultural colleges, manufacturers of farm equipment, and individual farmers. The Division of Agricultural Engineering will take the leadership in the investigation.

F. $4,960 for conducting experimental studies for crop spraying and dusting equipment:

(a) Very limited attention has been given to developing more adequate equipment, particularly as adapted to the use of power, for spraying and dusting crops against insect pests. Considerable work has been done in recent years relative to developing equipment for dusting cotton and the time has come when this study should be extended to include other crops on which the annual loss from insect damage is great.

(b) The plan of the Department will be:

To test the types of equipment already available with the object of improving the same and to develop, by experimental methods, equipment more particularly adapted to this work.

(c) Cooperation:

There is anticipated cooperation with the Bureau of Entomology, which Bureau would handle those phases relating to insect life and the effectiveness of spraying and dusting, while the Bureau of Agricultural Engineering would conduct those phases of the study relating to the design and construction of machines to meet the requirements as determined by the Bureau of Entomology.

(4) $5,000 for conducting studies in rural electrification; specifically, for investigating and reporting upon the refrigeration of milk on the farm:

(a) The proper cooling of milk on the farm is essential if it is to be delivered for consumption in a wholesome condition. If once allowed to become sour, due to inadequate cooling, the condition can never be corrected and results in a financial loss to the farmer. Most States and cities have laws and ordinances compelling the farmer to deliver milk at or below a specified temperature. The dairy farmer, therefore, in order to market his milk must provide adequate cooling facilities on the farm which in most cases now means mechanical refrigeration. There are at the present time a large number of firms manufacturing small refrigerating equipment for the cooling ofmilk on the farm. These machines are, for the most part, household machines that have been adapted to the special work of cooling milk on the farm. There is a question as to whether or not the machines on the market are of sufficient capacity and suitably arranged for economically performing the work.

(b) The plan of the Department will be:

To investigate and test a large number of these plants in Virginia and Maryland by installing the necessary electrical and other measuring instruments, measuring the quantity of milk handled daily, and noting the time required for cooling and storing, in order to determine the reliability, adaptability and cost of operation of the small refrigerating outfits as applied to cooling milk on the farm.

(c) Cooperation:

Cooperation will be with the Bureau of Dairy Industry, that bureau to furnish temperature-measuring instruments and the part-time services of experienced milk specialists to record temperatures and quantities of milk handled, note sanitary conditions, etc. The Division of Agricultural Engineering will furnish electrical measuring devices, record their readings, and perform the other purely engineering functions.

(d) Present Work:

At the present time a certain amount of work along the lines above-mentioned is being conducted cooperatively by the two Bureaus, near Washington, D. C., but it is intended to materially enlarge the scope of the work.

Activities under Appropriation for Agricultural Engineering

The investigations now being conducted under this appropriation relate to (1) studies of the utilization and apportionment of water for irrigation, and the organization, operation and maintenance of irrigation enterprises; (2) investigation of design, construction, operation and maintenance of drainage structures and the organization and development of drainage districts; (3) studies of farm structures and their appurtenances; (4) studies of farm mechanical equipment; (5) investigation of the storage and transportation of perishable products; (6) farm land development investigations.

Specific lines of work which have been of particular interest recently include (a) studies of the consumptive use of irrigation water in southern California, conducted in cooperation with the California Department of Public Works; (b) experimental work on the drainage of sugar cane land in southern Louisiana, in which a new method of attack shows very promising preliminary results; (c) laboratory studies, conducted in cooperation with the State University of Iowa, of flow of water over and around obstructions such as embankments and channel bends, in which useful information has been gained in respect to flow of floodwater over highway and railway embankments; (d) analytical studies of the deposit of fertilizer by distributors, in relation to the cotton seed; (e) experimental work in the development of means of fighting the European corn borer with machinery, in the course of which several devices, attachments, and methods have been developed which, used in the ordinary farming operations, are effective for corn borer control; (f) a study, made in cooperation with other bureaus and certain States, of the present extent to which mechanical power is used on farms; (g) experimental, cooperative, field studies of equipment and methods applicable to artificial drying of rice and forage.

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BUREAU OF AGRICULTURAL ECONOMICS

(a) GENERAL ADMINISTRATIVE EXPENSES

Appropriation, 1931	$286,000
Brookhart Act Adjustments	4,030
Total, 1931	290,030
Budget, 1932	290,030

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
General Administration	$285,750	$290,030	$290,030

Activities under this Appropriation

This appropriation is for expenses of the office of the chief and assistant chiefs of the bureau, and of various service sections such as personnel, stenographic, photographic, audits and accounts, and property and supplies, which serve the whole bureau.

(b) FARM MANAGEMENT & PRACTICE

Appropriation, 1931	$424,090
Allotment, Special Corn Borer App'n	40,000*
Brookhart Act adjustments	3,120
Total, 1931	467,210
Budget, 1932	480,760
Increase	13,550

*Transfer to this appropriation proposed in Budget, 1932.

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Farm Management & Practice				
Agricultural Finance.....	$ 54,117	$ 61,200	$ 74,750	$13,550
Land Economics & Land Utilization...	103,431	104,920	104,920	
Farm Population & Rural Life.....	34,100	34,240	34,240	
Farm Management.....	96,157	108,980	108,980	
Cost of Production.....	116,267	117,870	117,870	
Corn Borer Research.....	38,391	40,000	40,000	
Totals.....	$442,463	$467,210	$480,760	$13,550

The increase of $13,550 is submitted for the following purpose:

(1) $8,550 for studies of farm taxation:

(a) The growing seriousness of taxation as an economic problem affecting agriculture, and the demand of organized agriculture for further information in this field, makes it imperative that further work be undertaken. A great deal of additional information is needed to afford a basis for reliable conclusions as to specific causes of the increase and especially as to its effect on the economic status of agriculture. Research work in this field would aid also in formulating plans for more economical use of public funds in predominantly rural communities. It is necessary, for instance, to compare tax levies on farm property in the various sections of the country with the ability of agriculture to bear the increased burden. This calls for careful collection and interpretation of data in greater detail than has been done heretofore. A study should be made of the effect of expenditures and of taxes levied to meet them upon the economic progress or decline of agriculture in various parts of the country. The present extent of taxes on farm property and the prevailing method of levying them have an important relation to land utilization and to the conservation of agricultural resources.

(b) The plan of the Department will be:

To employ a specialist on taxation who will devote his entire time to a study of taxation problems, and who will gather and compile data for use in meeting the demand for basic information upon taxation. Assistance will be given to State agencies in meeting specific problems and in revising their taxation systems.

(c) Cooperation:

The work will be carried on under informal cooperation with State and other agencies which will assist in carrying on the field work. The bureau has more requests for assistance in carrying on studies of taxation than it is now able to meet.

(d) Present work:

Work on ascertaining the trend of farm taxes is being carried on in various States and sections. Reports are being obtained from 17,000 farmers giving the value of property, taxes paid and other information which make it possible to determine changes in taxation. The results of research in farm taxation, conducted in cooperation with a number of States were summarized and published recently as Technical Bulletin No. 172 "Taxation of Farm Property." This bulletin has been in great demand by farmers' organizations and others. A study is being made of the relation of taxes to land values. Approximately $12,000 is being expended during the current year on work related to taxation. New projects are being undertaken in cooperation with several States.

(2) $5,000 for study of farm mortgage finance:

(a) The need for study of farm mortgage finance has developed as a result of the increased volume of real estate acquired by the Federal Farm Loan System with its accompanying influence upon the marketability of their securities. Recent renewal difficulties reported in connection with loans held by life insurance companies, due to declining land values, emphasize the need of a thorough analysis of appraisal valuations.

(b) The plan of the Department will be:

To conduct studies dealing with the operation of farm loan associations; the disposal of foreclosed farm lands; and the analysis of farm mortgage data reported by life insurance companies.

(c) Cooperation:

The work will be carried on under informal cooperation with the Federal Farm Loan Board and other government and State agencies.

(d) Present work:

The results of an analysis of the farm mortgage situation in the United States are being prepared for publication. Information is being made available showing estimates of the amounts of farm mortgage paper in the hands of various lending agencies. The movement of capital into agricultural areas is being traced and indexes of the rate at which farms are being mortgaged and the rate at which they are being cleared of debt are being prepared. Approximately $20,000 is being expended on studies relating to farm mortgage finance during the current year. Estimates are being made of the trends in farm mortgage indebtedness.

Activities under the Appropriation for Farm Management and Practice

The economic research work of the bureau dealing primarily with production problems is done chiefly under this appropriation. This includes farm organization and management problems, cost of production, agricultural credit, insurance, taxation, farm ownership and tenancy, labor, land settlement and utilization, and farm life problems

(c) MARKETING & DISTRIBUTING FARM PRODUCTS

Explanation of change in language: The insertion of the language "and including investigations of cotton ginning under the Act approved April 19, 1930 (46 Stat. p.248)" is recommended in order to include the provisions of this legislation, since the investigations are of the same general character as those carried under this item.

Appropriation, 1931	$836,800
Allotment from appropriation for Cotton Ginning Investigations (Second Deficiency Act 1930)	35,000
Brookhart Act adjustments	5,540
Total, 1931	877,340
Budget, 1932	900,000
Increase	22,660

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Marketing Fruits & Vegetables	$ 89,800	$ 90,880	$ 90,880	-
Market Price Trends & Transportation	119,265	121,220	143,880	$22,660
Marketing Livestock, Meats and Wool	84,586	94,740	94,740	-
Marketing Dairy & Poultry Products	37,040	38,780	38,780	-
Marketing Hay, Feed & Seed	52,673	64,540	64,540	-
Cotton Handling & Marketing	41,256	42,160	42,160	-
Cotton Standards & Testing	32,556	43,080	43,080	-
Cotton Utilization	37,211	32,800	32,800	-
Cotton Ginning	-	35,000	35,000	-
State Cooperation in Marketing Work	37,356	48,040	48,040	-
Grain Investigations	110,261	98,660	98,660	-
Market Information	35,833	35,900	35,900	-
Outlook Reports	95,674	121,440	121,440	-
Marketing Tobacco	-	10,100	10,100	-
Totals	$773,511	$877,340	$900,000	$22,660

The increase of $22,660 is submitted for the following purpose:

(1) $22,660 for studies of trends of prices, production and consumption:

(a) Producers and handlers of all important farm products should have available at all times, data indicating price trends. In order to be in position to meet the need and demand for this type of information, it will be necessary to expand the research studies in price analysis to determine the factors which influence prices. Careful research on the effect of changes in freight rates upon prices that farmers receive for their products will be helpful to both the Department of Agriculture and to the Interstate Commerce Commission in developing policies with reference to transportation. Research will also contribute toward increased economy to both shippers and carriers in transportation of agricultural products. There is great need for expanding the work of analyzing factors affecting the demand for agricultural production in the United States. Little information is available on the demand side of the marketing question, although there is a very insistant call upon the bureau for this type of information from farm business organizations, extension services, and local agricultural workers as a basis for revising production programs.

(b) The plan of the Department will be:

To compile estimates of consumption per capita of the different farm products of the United States, and to study the elasticity of demand in relation to the surplus problem, variations in the requirements of different classes of consumers, and the effect of changes in demand upon prices which producers receive. Analyses will be made of all of the various factors which influence prices for certain important farm products.

(c) Cooperation:

Informal cooperation will be maintained with various agricultural agencies both State and local in the gathering and dissemination of information.

(d) Present work:

Intensive research work is being done on factors influencing trends of production and prices. This work furnishes the basis for the outlook reports of the bureau. While the outlook reports have been improved and made more useful each year as a guide to producers, much more intensive research is necessary in order that the statistical position of each of the important commodities can be accurately summarized. Approximately $25,000 is being used at present for this specific type of work, but a much larger amount is used in gathering and publishing statistical data upon which these analyses are based.

Activities under Appropriation for Marketing and Distributing Farm Products

This appropriation covers research on the economic problems of marketing. The statistical and analytical work on trends of production and prices, and the preparation of the outlook reports are also carried on this fund. In addition the physical problems connected with handling, grading, packing, shipping and marketing of products are studied and recommendations are made for improvements. Numerous laboratory studies are carried on, such as spinning tests of various types and grades of cotton, milling, baking and chemical tests connected with the grading of grain. Work is being done to establish new and additional uses for cotton. Standardized grades have been prepared for a large number of products and demonstrational work is carried on to educate the producers and the trade in their use.

Specific lines of work which are of particular interest at the present time include: cotton ginning investigations which were provided for by a special Act during the last session of Congress. Under this Act an experimental gin will be built and operated under the direction of the agricultural engineering branch of the Department. The bureau of Agricultural Economics will study the effects upon the cotton fibers of different methods of gin operation.

(d) CROP AND LIVESTOCK ESTIMATES

Explanation of change of language: The insertion of the language "and not to exceed $1,000 for newspapers" is recommended in order to provide for subscriptions to newspapers in the new offices provided for under the expansion of the foreign agricultural service.

Appropriation, 1931	$950,000
Brookhart Act adjustments ,,,,,,,,	7,600
Total, 1931	957,600
Budget, 1932	1,200,000
Increase	242,400

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Crop and Livestock Reports.....	$642,794	$719,360	$719,360	-
Production & Marketing Statistics.....	84,391	84,760	84,760	-
Foreign Agricultural Service.....	112,069	153,480	395,880	$242,400
Totals	$839,254	$957,600	$1,200,000	$242,400

While there is an increase submitted, of $242,400 for expansion of the Foreign Agricultural Service, there is an actual increase of only $42,400 since $200,000 has been made available for this work in 1931 by the Federal Farm Board, for carrying out the provisions of the Act of June 5, 1930 (Public No. 304, 71st Congress).

(a) This estimate is submitted in order that the Department may be in position to continue to furnish the information demanded by agricultural interests throughout the country, and authorized by the Act of June 5, 1930. (Public No. 304, 71st Congress) The foreign crop, livestock and market reporting service heretofore has been wholly inadequate to meet the pressing needs of agriculture in attempting to adjust production programs to probable demands, or to serve as a reliable guide to the Federal Farm Board in the conduct of certain phases of its activities. An estimate of the outlook for American agricultural products requires accurate knowledge of the world situation in regard to acreage sown, crop conditions, harvest yields, stocks on hand, numbers and kinds of livestock, and prices, together with an appraisal of factors influencing present and prospective competition and demand.

(b) The plan of the Department will be:

To continue to maintain agricultural commissioners and commodity specialists at strategic points in the foreign field to acquire and disseminate information regarding world competition and demand for agricultural products and the production, marketing, and distributing of said products in foreign countries.

The actual increase of $42,400 will be used as follows:

$12,500 for the expenses of a forester, who, under direction of the Forest Service, will make studies of forest land utilization and other forestry matters in Europe.

$29,075 to providing for living quarters, heat, fuel and light, in accordance with the Act entitled "An Act to provide living quarters, including heat, fuel, and light, for civilian officers and employees of the Government stationed in foreign countries" approved June 26, 1930 (Public No. 445 - 71st Congress). The remaining amount of $825 will be used in meeting miscellaneous increased costs.

(c) Cooperation:

Special attention is being given to coordinating this work with similar activities of the Consular Service of the State Department and with those of the foreign representatives of the Department of Commerce. To this end a liaison committee has been created. This committee consists of one representative each of the Department of State, the Department of Agriculture, the Department of Commerce, and the Federal Farm Board. This committee is in position to facilitate the coordination of effort between the departments concerned and insure more adequate services in the field to be covered.

(d) Present work:

Information is being gathered in the foreign field and disseminated throughout the country by various means of publicity. Foreign Crops and Markets, a mimeographed periodical, covers all of the important information from the foreign field. Information is also disseminated over the bureau's leased telegraph wire system, by radio, the press and other means. Data are obtained from the representatives of the Department of State and the Department of Commerce, and reports are received direct from foreign governments. Many Governments fail to report statistically upon the agricultural activities of their countries. In some cases the information available is expressed in terms which make it difficult to compare conditions in different countries and in previous periods. Hence, there remains the essential task of supplementing the existing data by observations of trained investigators. This work, together with the interpretation of existing data in terms of

prospects for American agriculture, is essential as a basis for sound production and marketing programs in this country.

Activities under Appropriation for Crop and Livestock Estimates

The work under this appropriation covers the gathering, compiling and publishing of statistics of production on all important crops and on livestock and livestock products. It provides fundamental basic information on the agricultural situation of the country, and under the proviso for foreign competition and demand, in foreign countries.

Under the proviso the staff of the foreign agricultural service is being expanded. By the close of the present fiscal year it is expected that agricultural commissioners will be stationed at London, Berlin, Shanghai, Marseilles, Belgrade, Buenos Aires, and at some point in South Africa, Australia, India and the Scandinavian countries. Assistant agricultural commissioners will be provided for South America, the Danube Basin, the Orient and Australia. In addition to this resident staff located in foreign countries, specialists are being sent out who will give their attention to the world situation with respect to specific commodities. For these positions the department employs men who are conversant with the international situation in cereals, cotton, tobacco, wool, fruits, livestock and meats, and dairy products. These men are assigned to work on specific commodities rather than to territories and are expected to constitute a mobile force working in close touch with the foreign field staff and with the commodity divisions of the Bureau of Agricultural Economics in Washington.

(e) MARKET INSPECTION OF FARM PRODUCTS

Appropriation, 1931	$525,000
Brookhart Act adjustments	4,635
Total, 1931	529,635
Budget, 1932	550,026
Increase	20,391

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Inspection of Fruits and Vegetables	$309,266	$312,015	$317,406	$5,391 (1)
Inspection of Dairy & Poultry Products	34,589	42,120	47,120	5,000 (2)
Inspection of Hay, Beans, Broomcorn, etc.	51,314	60,100	64,100	4,000 (3)
Grading of Meats	15,631	40,300	46,300	6,000 (4)
Grading of Tobacco	18,000	70,100	70,100	--
Grading of Rice	----	5,000	5,000	--
Totals	$428,800	$529,635	$550,026	$20,391

The increase of $20,391 is submitted for the following purposes:

(1) $5,391 for the inspection service on fruits and vegetables:

(a) The increase will be used to employ one additional inspector to meet the increased demand for service in Chicago. At this point the bureau has not been able to meet all of the requests for service.

(b) The inspection service on fruits and vegetables covers 42 of the principal receiving markets of the country and inspections are made at a number of additional points adjacent to the various branch offices. In addition, shipping point inspections are made in cooperation with 40 States. A total of 288,439 cars were inspected during the past year in addition to large quantities of products for other governmental agencies.

(2) $5,000 for expansion of the inspection service on dairy and poultry products.

(a) The increase will be used to employ one supervising inspector to develop the grading service on dressed poultry at terminal markets, shipping points and canning plants.

(b) Tentative standards for dressed poultry have been announced and there is an urgent demand upon the part of producers and others for the inspection service. The average consumer has very inadequate information with regard to quality in dressed poultry and it is believed that the grading service will be of distinct benefit both to the producer and the consumer.

(c) The grading of dressed poultry is a new development but it is already meeting with enthusiastic approval. Ten poultry plants in Kansas are grading their dressed poultry under the supervision of this bureau and labeling each bird. Some grading work is done at the various branch offices also. A very large amount of dressed poultry is inspected also at canning plants for condition and wholesomeness. Approximately $14,000 is being expended at present on the inspection of poultry and eggs.

(3) $4,000 for expanding the shipping point inspection service on beans:

(a) The increase will be used to employ one supervising inspector to develop a cooperative bean inspection service in Michigan and adjoining States.

(b) There is an active and growing demand for the inspection service on beans. The shippers prefer that the inspection be made at point of origin, consequently the service has been inaugurated at shipping points. In addition to inspections at a number of terminal markets, cooperative shipping point inspections are being made in Alabama, California, Idaho and Montana. Approximately $7,000 is available at present for bean inspection.

(4) $6,000 for expansion of the beef grading and stamping service.

(a) The increase will be used to employ a meat grader to be stationed at Denver and to provide some additional supervision of the work at other places.

(b) There is a rapidly growing appreciation of the value of this service to both consumers and producers and the bureau has been able to meet the demand for the service in but a small measure. Requests for the service are on file from a large number of cities at which it has not been possible up to the present time to place graders. Resolutions passed by livestock organization, retail meat dealers associations and others and letters from individuals and firms attesting to the value of the service and the need for expansion are being received constantly.

(c) This work was carried on during the past year in seven cities. An increase was provided in the appropriation for 1931 which will provide for the extension of the work to about ten additional cities. Approximately $28,000 is available at present for the work. The beef grading and stamping service is entirely self-supporting. Cooperation is maintained with the National Live Stock and Meat Board.

Activities under the Appropriation for Market Inspection of Farm Products

This appropriation covers the inspection and grading services on fruits and vegetables, dairy and poultry products, hay, beans, seeds, broomcorn, rice, peanuts, meats and tobacco. This service is permissive in character, the Federal inspector performing the service only at the request of an interested party and issuing certificates which are prima facie evidence in the courts of the United States as to the quality and condition of the shipment inspected.

The inspection work is one of the most popular activities of the bureau and the demand for the service is constantly greater than can be met with available facilities although increases in the appropriation have been granted from year to year. It is in a large measure self-supporting, but can not be made entirely so. While it is a permissive service, it has the effect of regulation, since the mere fact that a Federal inspector is available who can be called upon to inspect a shipment, acts as a deterrent upon receivers who might reject a shipment without sufficient cause, or indulge in other sharp practices. For this reason inspectors are maintained in certain receiving markets, at the urgent request of shippers, although there may not be inspection work at all times to make the work self-supporting.

(f) MARKET NEWS SERVICE

Appropriation, 1931	$1,385,000
Brookhart Act adjustment	6,920
Total, 1931	1,391,920
Budget, 1932	1,427,920
Increase	36,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Market News Service on Livestock, Meats and Wool	$468,800	$512,967	$528,967	$16,000
Market News Service on Fruits and Vegetables	524,730	562,490	574,490	12,000
Market News Service on dairy and poultry products	197,667	209,880	213,880	4,000
Market News Service on grain, hay, feed and seed	96,400	106,583	110,583	4,000
Totals	$1,287,597	1,391,920	1,427,920	36,000

The increase of $36,000 is submitted for the following purposes:

$36,000 increase in working funds, as follows:

(1) $16,000 for expansion of the news service on livestock:

The increase will be used to develop and conduct a market news service covering direct movements of livestock in large producing areas west of the Continental Divide. Two associate marketing specialists will be employed who will probably be attached to the San Francisco and Ogden offices but who will travel over large areas.

Marked changes are taking place in the methods of marketing livestock. Large numbers of livestock are bought by packers direct from the producers. The extensive highway improvement programs have made possible the shipment of livestock by truck over long distances, and have tended to foster direct buying by enabling the interior packers to enlarge their territories. The expansion of livestock truck transportation has been enormous. For this reason it is necessary for this bureau to have representatives in the producing territory in order to report prices and market conditions.

Branch offices are maintained in 24 cities throughout the year, and market conditions and prices are reported at 30 important markets of the country. Information is compiled and published covering daily livestock prices by 60 classes and grades at 23 markets; daily fresh meat prices by 43 classes and grades at 4 markets; daily cured meat prices by 20 classes and grades at 4 markets; weekly wool prices at Boston; actual daily receipts of livestock at 18 markets, and other data. Summaries and economic reviews are furnished newspapers and farm publications and special reports are prepared for radio stations. An amount of $512,967 is available for the market news service on livestock, meats and wool during the present year.

(2) $12,000 for expansion of the news service on fruits and vegetables:

The increase will be used to open new temporary field offices for short periods at various points in important producing sections during the heavy movement of important crops. At these stations the bureau representatives receive by telegraph information as to supplies, prices, etc. at important central markets. This information is sent out to producers in the vicinity as a guide in shipping their products. Often cars on rails are rerouted as a result of the information received from the central markets.

Stations will be opened at Charleston, S.C. and Washington, N.C., to report on white potatoes; and at Humboldt, Tenn. to report on tomatoes. In addition, increased work will be done at Pocomoke City, Md. to cover sweet potatoes; at Mobile, Ala. to cover cucumbers; and at Bradenton, Fla., to cover vegetables.

The demand for current market information has increased greatly, especially since agricultural conditions have become acute. Effort has been made constantly to improve this service and to obtain wider dissemination of the data gathered.

Market stations are maintained in 22 cities and approximately 40 temporary stations are operated for varying periods during the movement of important crops. Approximately 15,000,000 mimeographed market reports are issued in the course of a year, to a mailing list of producers, producers' and shippers' associations, dealers, common carriers, banks, newspaper and other news disseminating agencies.

Complete market information is distributed covering 22 of the most important fruits and vegetables. Carload shipment information is obtained from common carriers and published on 37 products. During the past year a total of 1,073,707 cars were reported by the carriers. An amount of $562,490 is available for the entire service on fruits and vegetables for the current year.

(3) <u>$4,000 for an expansion of the news service on dairy and poultry products:</u>

The increase will be used to employ one additional specialist who will devote his time to improving and strengthening the statistical work so as to be of greatest benefit to the industry.

The demand for market information covering the dairy industry is especially acute at the present time. Much of the information is sent out by this bureau in the form of weekly summaries and economic reviews of market conditions as it has been found that this type of information most effectively meets the demand.

This service is carried on from Washington and ten branch offices in important markets for these products. The reports cover prices, supply, demand, movement and other information on butter, cheese, live and dressed poultry, eggs, turkeys, and milk and cream. An amount of $209,880 is available for the service on dairy and poultry products during the current year.

(4) <u>$4,000 for expansion of the news service on grain:</u>

The increase will be used to employ one additional specialist who will assist in gathering additional information and prepare reports to meet the growing demand for current statistics of grain.

The agricultural depression has increased the demand for market information on grain. This service is handled largely through furnishing

weekly and monthly reports and summaries, and economic reviews of the market situation. There is urgent need for the preparation of more detailed and timely reports. This information is given wide publicity through the bureau's branch offices, and is furnished to the Federal Farm Board and other governmental and State agencies which are working on problems relating to the marketing of grain.

The service covers market reports on grain, hay, feed, seed, beans, Soybeans, broomcorn and rice. Ten branch offices are maintained in important markets in the country. The extension of the service to the Pacific Coast during the past year has greatly strengthened the service and has made the reports more complete. An amount of $106,583 is available during the current year for this division.

Activities under Appropriation for Market News Service

The market news service is built upon the leased wire telegraph system. The bureau obtains under contract the exclusive use of certain telegraph wires throughout the day, and employs its own telegraphers who transmit the market information over the wires in code and decode the incoming messages. The market reporters are in the markets early in the morning and report receipts and prices. The information goes over the leased wire to Washington and to all branch offices where it is combined with other reports and released to the public. In addition telegraph and mail reports are furnished the bureau by common carriers and other reporters. A constant stream of market information is kept going over the wires and is given publicity throughout the country by telephone, telegraph, radio, mail, bulletin boards, newspapers and otherwise.

(G) ESTIMATES OF COTTON GRADE AND STAPLE

Appropriation, 1931.....$420,000
Budget, 1932..... 420,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Estimates of Cotton Grade and Staple.....	$418,167	$420,000	$420,000

Activities under this Appropriation

This act under which this work is conducted directs the Secretary of Agriculture to collect and publish annually, statistics or estimates covering the grades and staple length of stocks of cotton, known as the "carry-over" on hand on the first day of August of each year in warehouses and other establishments. Following such publication he is directed to publish at intervals estimates of the grade and staple length of cotton of the then current crop, it being provided that not less than three such estimates shall be published with respect to each crop. It is further provided that in any such statistics or estimates published, the cotton which is tenderable under the United States Cotton Futures Act shall be stated separately from that which may be untenderable.

The data on which the carry-over estimate is based are obtained by classing a representative portion of the cotton carried over in consuming establishments, public storage and compresses, and on the farms. Estimates of the crop were based on the classification of cotton furnished by gins so selected as to represent approximately 10 per cent of the cotton ginned in the United States.

(h) TOBACCO STOCKS AND STANDARDS

Appropriation, 1931.....$25,000
Budget, 1932..... 25,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Tobacco Stocks & Standards....	$23,722	$25,000	$25,000

Activities under this Appropriation

Under the provisions of the tobacco stocks and standards act, approved January 14, 1929, reports are made quarterly of tobacco holdings. These tobacco stocks reports show not only a complete separation according to type, but a separation of new and old crops according to groups of grades, which have the effect of disclosing the quality of tobacco on hand according to its manufacturing utility. These reports make available much more adequate statistics on tobacco than had previously been available.

(i) ENFORCEMENT OF THE PERISHABLE AGRICULTURAL COMMODITIES ACT

Explanation of language: It is recommended that a new item be included to read as follows: "Perishable Agricultural Commodities Act; To enable the Secretary of Agriculture to carry into effect the provisions of the Act entitled An Act to suppress unfair and fraudulent practices in the marketing of perishable agricultural commodities in interstate and foreign commerce, $350,000 of which $100,000 shall be immediately available." The first appropriation, of $50,000, for preliminary activities under this legislation was contained in the Second Deficiency Act, 1930.

Appropriation, 1931 (Second Deficiency Act)...	$ 50,000
Budget, 1932.....	350,000*
Increase.....	300,000

* $100,000 of the 1932 appropriation is to be made available in 1931.

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Enforcement of the Perishable Agricultural Commodities Act.....	- - -	$50,000	$350,000	$300,000

The increase of $300,000 is submitted for carrying out the provisions of the Act approved June 10, 1930. (Public No. 325 71st Congress)

(a) The general purpose of this act is to regulate certain practices in the marketing of fruits and vegetables in interstate and foreign commerce. This regulation is to be accomplished through a system of licensing handlers of these commodities in such commerce. The act stipulates certain practices which, in the marketing of fruits and vegetables in interstate and foreign commerce, are de-

clared to be unlawful. The more important of these practices are the making of fraudulent charges by commission merchants or brokers; the rejection without reasonable cause by a buyer of a shipment upon its arrival in the market, or the failure to deliver on the part of the seller without reasonable cause; the dumping or destruction without reasonable cause of fruits and vegetables when received by commission merchants; and the making of any fraudulent or misleading statements by the handlers of these commodities concerning the condition or quality or disposition thereof; or the failure or refusal to correctly account therefor.

(b) The plan of the Department will be:

To establish an effective organization of trained inspectors and investigators who will be stationed at strategic points in the field to make inspections upon request, and to investigate complaints under the Act.

This act is of far reaching importance to the rapidly growing fruit and vegetable industry of this country. Its enforcement presents a complicated and difficult administrative problem of large proportions. It will require a personnel thoroughly acquainted with customs and practices followed in the marketing of fruits and vegetables, and capable of collecting and analyzing all essential facts in the light of a full knowledge and understanding of the law.

(c) Present work:

Preliminary work under this Act has been undertaken during the current year, in compliance with the provisions of the Act. Regulations have been prepared, and the work of licensing applicants, and investigating complaints is under way. The work thus far has been financed with $50,000 provided in the Second Deficiency Act 1930. The Budget estimate for 1932 contemplates an additional $100,000 which will be needed, to be made available in 1931.

(j) ENFORCEMENT OF THE U. S. COTTON FUTURES ACT AND U. S. COTTON STANDARDS ACT

Appropriation, 1931.....	$234,500
Brookhart Act adjustments.....	2,060
Total, 1931.....	236,560
Budget, 1932.....	236,560

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Administration of the Acts...	$ 19,894	$ 22,000	$ 22,000
Future and Spot Market Investigations and Cotton Price Quotations.....	52,632	51,980	51,980
Preparation and Distribution of Official Cotton Standards.	146,349	162,580	162,580
Totals.....	$218,875	$236,560	$236,560

Activities under this Appropriation.

Both the Cotton Futures and Cotton Standards Acts authorize the Department to promulgate standards for cotton. The Cotton Futures Act provides for the regulation of the cotton future exchanges and for the classification of cotton tendered for delivery on future contracts. Under this act supervision is maintained over designated spot markets, and a cotton price quotation service is maintained. In addition to furnishing authentic information of prices these quotations serve as a basis for the settlement for cotton, other than middling, delivered on future contracts. The Cotton Standards Act makes mandatory the use of the official cotton standards in interstate and foreign commerce. Copies of the official standards are prepared and sold to the public. No other agency is permitted to prepare these standards. Consequently, the bureau must be in position to meet these demands.

(k) ENFORCEMENT OF THE U. S. GRAIN STANDARDS ACT

Appropriation, 1931.....	$825,000
Unexpended balance from 1929 Appropriation.....	15,000
Brookhart Act adjustments.....	10,040
Total, 1931.....	850,040
Budget, 1932.....	863,571
Increase.....	13,531

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement U.S.Grain Standards Act.....	$817,257	$850,040	$863,571	$10,000	$3,531

The increase of $13,531 is submitted for the following purposes:

$3,531 Under-average Salary Grade Adjustments.

$10,000 for expansion of force to meet increased demand for appeal certificates, and for necessary supervision.

The increase will be used to employ three additional supervisors to be used in the Middle West wherever the call for appeal certificates is heaviest.

The work under the Grain Standards Act has increased constantly during the last few years. The appeals from grades assigned by licensed inspectors have become so numerous that they absorb a large part of the time of the staff and the regular supervisory work suffers. Many special problems arise in connection with the grading of out-of-condition and damaged grain which should receive more attention from supervisors. More supervision is needed also to bring about greater uniformity in applying the Federal Standards and other matters.

The work is conducted through the Washington office, general field headquarters at Chicago, six divisional offices, and 37 district offices. The additional amount of $10,000 requested in the estimates will serve to strengthen the force and make it possible to more nearly meet the needs of the grain interests. No new line of activity is contemplated.

Activities under Appropriation for Enforcement of the U.S. Grain Standards Act

Under the law this Department is charged with two major responsibilities: (1) establishment of official grain standards for each kind of grain, the use of which is mandatory in case of interstate and foreign commerce transactions, and the enforcement of a correct and uniform application thereof by inspectors who are licensed by this Department; (2) determination of the true grade of individual lots of grain upon appeal by any interested party.

The enforcement of the Grain Standards Act requires a large organization to supervise the work of licensed inspectors and to prevent infractions of the law. All grain shipped by grade in interstate commerce must be inspected by a licensed inspector. This results in an enormous number of inspections. The Federal Grain Supervisors work constantly to check up the work of the licensed graders.

(1) ADMINISTRATION OF THE U. S. WAREHOUSE ACT

Appropriation, 1931.....	$256,000
Brookhart Act adjustments....	1,200
Total, 1931.....	257,200
Budget, 1932.....	312,900
Increase.....	55,700

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Administration of the U.S. Warehouse Act.....	$242,568	$257,200	$312,900	$55,000	$700

The increase of $55,700 is submitted for the following purposes:

$700 Under-average Salary Grade Adjustments.

$55,000 for expansion of the field inspection staff:

(a) On account of the agricultural situation, there has been a rapid increase in the calls for inspection and licensing of warehouses. The expansion in this activity is due primarily to an increasing recognition on the part of cooperative marketing associations, growers, merchants, warehousemen, and bankers of the protection afforded by the United States Warehouse Act in providing a warehouse receipt of maximum value for collatoral.

On November 1, 1930, the licensed capacity for cotton warehouses was 4,457,903 bales or an increase of approximately 20% over a year ago, the licensed capacity for grain was 73,435,122 bushels or more than 100% over a year ago. The licensed capacity for wool, tobacco, beans, dried fruit and canned foods have also increased. These increases have taxed the facilities to the utmost, and the

applications are increasing continuously.

(b) The plan of the Department will be:

To appoint 11 additional inspectors who will be employed in making inspections of warehouses applying for licenses, and in checking up on the activities of these warehouses after they have obtained licenses. Each of these additional warehouses must be examined in accordance with the Act and the regulations to determine the eligibility of the warehouseman and the suitability of the space for license. Following licensing, all of these additional warehouses and this additional capacity should receive at least four inspections annually. On account of the large volume of grain that will be handled through some of the large elevators which have been licensed this season even more than four inspections per annum would be desirable. The present organization is inadequate to handle this expansion. Moreover, it is confidently expected that further substantial increases will take place.

(c) Cooperation:

A number of States which have State warehouse Acts in force cooperate in this work.

(d) Present work:

The work is now carried on from Washington and eight branch offices located in important producing districts. The additional inspectors will make it possible to meet more completely the demand for service.

Activities under Appropriation for Administration of The U. S. Warehouse Act

The main purposes of the Warehouse Act are to safeguard the storage of farm products and to furnish a warehouse receipt which will be acceptable as collateral for loans and thus furnish the farmer with a means of securing credit as an aid to the orderly marketing of his crop.

Products warehoused under this Act are: Grain, cotton, tobacco, wool, canned foods, cold pack fruit, dried fruit, peanuts, broomcorn, potatoes, beans, sirup, and cottonseed.

Adequate supervision of warehouses licensed under the United States Warehouse Act is one of the chief features of the Act. In fact it is the backbone of the service. It is the feature that adds most to the value of warehouse receipts and is so regarded by bankers and financing agencies of the Federal Government. Without adequate supervision, the service will fail. This supervision of warehouses under the Warehouse Act bears the same relation to warehousing that supervision of banks under the National Bank Act bears to banking. It is the service which affords real protection both to the storer and the banker.

(m) ENFORCEMENT OF THE STANDARD CONTAINER, HAMPER AND PRODUCE AGENCY ACTS

Appropriation, 1931.....$45,000
Budget, 1932..... 45,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Standard Container, Hamper and Produce Agency Acts..	$38,818	$45,000	$45,000

Activities under the Appropriation for Enforcement of the Standard Container, Hamper & Produce Agency Act

Under the two standard container acts, provision is made for fixing standards for climax baskets for grapes and other small fruits and vegetables; standards for baskets and other containers for small fruits, berries and vegetables; standards for hampers, round stave

baskets and splint baskets for fruits and vegetables. The Produce Agency Act provides for the prevention of destruction or dumping without good and sufficient cause, of farm produce received in interstate commerce by commission merchants and others, and requires them to account for all farm produce received by them. The staff employed under this appropriation is engaged in enforcement of these acts, including the testing of containers, investigation of complaints, etc.

(n) COMPLETION OF WOOL WORK

Appropriation, 1931	$8,000
Budget, 1932	6,000
Decrease	2,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Decrease
Completion of Wool Work...	$5,945	$8,000	$6,000	-2,000

A decrease of $2,000 is submitted.

This work, transferred from the War Industries Board to the Department of Agriculture by Executive Order of December 31, 1918, provides for the collection from dealers and return to growers of excess profits resulting from the sale of the wool clip of 1918. Completion of this work is now awaiting court decisions on a number of cases.

(o) WOOL MARKETING STUDIES

Appropriation, 1931.....	$50,000
Budget, 1932	50,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Wool Marketing studies...	$26,688	$50,000	$50,000

Activities under this Appropriation.

The Act of May 17,1928 (U.S.C. Suppl. III, Title 7, Secs. 415-b-415-d) provides for acquiring and diffusing useful information relative to the standardization, grading, preparation for market, marketing, utilization, transportation, handling, and distribution of wool, and of approved methods and practices relative thereto, including the demonstration and promotion of the uses of grades for wool in accordance with the standards promulgated by the Department of Agriculture.

This Act authorizes appropriation of not to exceed $50,000 annually for research and demonstration work on wool from the funds collected under the "Completion of the Wool Work (War Industries Board)" and which remain undistributable in the Treasury because it has been found impossible to ascertain the growers to whom they belong. The funds are being used in perfecting the standards for wool and demonstrating their use. Methods of handling and marketing wool are also being studied and much laboratory work is being done on questions of moisture, shrinkage, and similar matters.

(p) OPERATION OF CENTER MARKET

Appropriation, 1931
(Second Deficiency Act, 1930)...$75,000
Budget, 1932.....- - - -

No estimate is submitted for 1932 since the Department has been notified by the Treasury Department that the site upon which Center Market is located will be needed January 1, 1931 in carrying out the building program of the Government.

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Note. - Also See Miscellaneous Section for "Special Corn Borer Research."

BUREAU OF HOME ECONOMICS

SALARIES AND EXPENSES

(a) General Administrative Expenses

Appropriation, 1931	$18,500
Budget, 1932	28,320
Increase.....	9,820

Of the total increase of $9,820, $320 is requested for under-average salary grade adjustments, and the remaining $9,500 is an apparent increase only, since transfer is recommended of this amount from the sub-appropriation "Home Economics Investigations", to cover salaries of librarian, assistant librarian, two laborers, travel of chief of bureau and other general items, now carried under that sub-appropriation but which it is believed preferable hereafter to carry under the sub-appropriation for administrative expenses.

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
General Administration:	$18,500	$18,500	$28,320	$9,500	$320

Activities under this Appropriation:

The activities under this appropriation include (1) the office of the Chief of Bureau, (2) the business office of the Bureau and (3) the Bureau library which, while not of general administrative character, can be most effectively and economically administered as a general service unit for the entire Bureau.

(b) Home Economics Investigations

Explanation of change in language: The following changes are made in the language, in the interest of uniformity, and to more properly cover the work of the Bureau.

The sentence, "to enable the Secretary of Agriculture to investigate," is changed to read, "for conducting either independently or in cooperation with other agencies, investigations of." The words, "to disseminate," are changed to read "for disseminating." The sentence, "the employment of labor in the City of Washington and elsewhere, supplies," is struck out and the word, "travel", inserted.

Appropriation, 1931 .....$189,200
Budget, 1932 219,060
Increase 29,860

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	INCREASES W.F.	INCREASES U.A.S.
Institutional Cookery	-----	-----	7,500	+7,500(1)	-----
Nutrition Studies	24,230	31,030	33,590	+2,500(2)	+60
Food Utilization Studies	23,000	30,450	30,450	-----	+100
Food Composition	14,000	16,900	17,100	-----	-----
Household Production	9,000	9,420	9,420	-----	+100
Standard & Cost of Living	12,000	15,150	24,150	+9,000(3)	-----
Dietary Studies	10,070	16,500	16,500	-----	-----
Food Purchasing Studies	-----	10,000	10,000	-----	-----
Cotton Utilization Studies	11,710	11,710	16,710	+5,000(4)	-----
Wool Utilization Studies	7,090	7,090	12,190	+5,000(5)	+100
Clothing Design Studies	13,500	13,500	13,500	-----	-----
Home Furnishing Studies	2,000	2,800	2,800	-----	-----
Household Equipment	-----	-----	10,000	+10,000(6)	-----
Home Economics Information	14,000	15,150	15,150	-----	-----
Library & Other Miscel.Exp.	8,400	9,500	------	-9,500*	-----
Totals	149,000	189,200	219,060	+29,500**	+360

*$9,500 estimated for 1932 under sub-appropriation for Administrative Expenses.

**While there is an apparent or net increase of $29,860, due to the proposed transfer of items totaling $9,500 to the sub-appropriation for General Administration, there is an actual increase in this sub-appropriation of $39,360, as follows:

$360 for under-average salary grade adjustments

$39,000 increase in working funds, which are needed for the following objects:

(1) $7,500 for Institutional Cookery:

(a) The Bureau has not at any time undertaken studies of this nature, but it is continually being called upon to furnish information to State and Federal institutions as well as private agencies, in regard to equipment for institutional work, methods of preparation and service of foods in same. We have made a study of dietaries in institutions which show that the greatest need in most of them is for better cooking methods. This is partly a question of suggested menus and partly equipment and methods of cooking.

(b) The plan of the Department will be:

The employees' cafeteria in the extensible unit of the Department of Agriculture will offer the Bureau of Home Economics an unusual opportunity to work directly on the problems which arise in institutional feeding. The $7,500 will be used to employ technical workers to conduct these investigations in the cafeteria and to prepare the material, made available through its operation, for the maximum amount of service to the Bureaus of the government and various outside agencies.

(2) $2,500 for Further Development of Nutrition Studies:

(a) This increase will be used for further expansion of vitamin studies. Although studies are now in progress on the vitamin content of foods there is only meager data on such problems as the effect of temperature of storage on the vitamin content of leafy vegetables, and whether the vitamin content is destroyed or lessened in foods cooked, canned, dried, stored, frozen, or artificially ripened.

Nutritionists, doctors, nurses and dietitians are continually looking for information on the vitamin content of foods in order that well rounded diets may be prescribed in preventing certain specific deficiency diseases such as pellagra which costs the lives of many hundreds of people each year and is caused by an inadequate supply of a single vitamin in the diet.

(b) The plan of the Department will be:

To make a study of leafy vegetables and root crops to determine the influence of conditions of storage and time of holding on lettuce, spinach, and certain selected root crops.

To run detailed experiments to determine the effect upon the vitamin content of foods having been processed by canning, cooking, storing, or drying.

(c) Cooperation:

The vitamin studies are being made in close cooperation with the Land Grant Colleges through the National Committee on Vitamin content of Food in Relation to Human Nutrition. With the increase of $2,500 the bureau will cooperate with the Bureau of Plant Industry in making the study of storage conditions on the vitamin content of vegetables.

3) $3,000 for Standards and Cost of Living Studies

(a) The low standard of living of the mountain families in the Southern Appalachians has long been a cause of concern. Inadequate income, poor diet and living conditions, poor health and low productive efficiency are all too common, and react upon each other in a vicious circle. The situation is too complex and too severe to be met by the efforts of individual families. If conditions are to be improved, a program of education and readjustment must be developed for the region by qualified agencies, after careful study and analysis of typical situations.

Considerable interest has recently developed in such a joint attack upon the problem by several bureaus in the Department, by the Experiment Stations in several Southern States and by other interested agencies. The share of this Bureau in the study will cover the various aspects of the family living, with a view to determining the possibilities for improving the diet, health and living conditions of the families and the use which is made of the family income. This information will be related to information obtained by agricultural economists concerning the possibilities for increasing the family income by better utilization of the land and of the labor sources of the family. The share which the educational social and religious institutions of the community can take in the rehabilitation of the region will be considered by rural sociologists.

(b) The Plans of the Department will be:

To study the situation in typical selected areas in two or possibly three Southern States, by means of personal visits to the farm families living in the areas. Information concerning the various aspects of family living and family health will be obtained from the homemaker, while corresponding information concerning family income and farm management will be obtained from the farm operator by a farm management specialist, who will visit the family at the same time.

(c) Cooperation:

The study will be made in cooperation with the Experiment Stations of the States concerned, which will care for those aspects of the study relating to farm management and to the social institutions of the community, and which will provide assistance in the field work on family living. Several divisions of the Bureau of Agricultural Economics will probably also cooperate in the study.

(d) Present work:

During the year 1931 the Bureau is cooperating with the Bureau of Agricultural Economics and the Kentucky Experiment Station in the first study of this type to be made, covering some 280 mountain families in Knott County, Kentucky. The results of this study will provide a basis for comparison with those from other states in the Southern Appalachian region.

(4) $5,000 for cotton utilization studies

(a) This appropriation is asked in order to extend the investigations now under way in cooperation with the Bureau of Agricultural Economics on the influence of different grades and staple lengths of cotton on the appearance, resistance to wear and general utility of finished cotton fabrics. It is also proposed to initiate a study of the relation of fabric composition and design of clothing materials to the physical well-being of individuals. The production and utilization of fibers for clothing should depend largely upon their hygienic value. However, almost no research has ever been undertaken in this field. This aspect of textile utilization is intimately bound up with the production and marketing problems of American-grown fibers. The results of studies of this kind would furnish data upon which could be based more intelligent recommendations to the women of the country for the use of various fibers for clothing purposes.

(b) The plan of the Department will be:

To enlarge the scope of the present work in which cotton fabrics composed of fibers of known history are being given laboratory and actual wearing tests. The effect of such fabrics on metabolism, skin temperature and other physiological conditions of individuals will be determined and compared with effects produced by other fabrics of different fiber and fabric composition. In this way, definite information will be accumulated concerning the relative hygienic value of different kinds of fibers for clothing purposes.

(c) Cooperation:

The work done by the Bureau of Agricultural Economics is from funds previously appropriated for the utilization of cotton projects. No increase is being asked for 1932 by Agricultural Economics.

(d) Present Work:

No work is being done at present on the relative value of different kinds of fibers for clothing purposes. Under an allotment of $5,000 for the fiscal years 1929 and 1930, it has been possible to prepare and study the physical properties and wear resistance of one type of fabric representing three grades and one staple length of cotton.

(5) $5,000 for studies on wool utilization

(a) This sum is requested (1) in order to carry on in cooperation with the Bureau of Animal Industry, a series of investigations on the comparative value of different kinds and grades of American-grown wool for specific household fabrics and (2) to develop new and more effective utilization of the wool grown in this country. Investigations in regard to the value of various grades of both virgin and reworked wool, when used alone and when mixed with other fibers in fabrics, must be made before intelligent recommendations can be formulated for either the production of these fibers or their use by consumers. It is particularly important at this time that the work of the Department on wool production be correlated with its utilization aspects.

(b) The plan of the Department will be:

To prepare fabrics containing known amounts of different kinds and grades of American-grown wool produced under experimental conditions and to study their relative utilitarian value when used in clothing and household textiles. It is also proposed to investigate the possible uses of this fiber in the household and develop fabrics for specific purposes for which wool is preeminently suited.

(c) Cooperation:

The work will be done in cooperation with the Bureau of Animal Industry. No increase is being requested by the Bureau of Animal Industry for this purpose, since the wool necessary for the project is being produced continuously in connection with other established lines of work.

(d) Present work:

Under an allottment of $6,000 for the fiscal years 1929 and 1930, blanket fabrics containing known amounts of four grades of virgin wool were prepared. Their utilitarian value is now being studied. It was necessary to provide considerable equipment for this work, since no research of this kind has been done previously in the Department. It has also been possible to investigate and publish recommendations for the use of wool in connection with new types of children's outdoor garments. The additional funds are requested in order that this type of work may be increased at this time when the results are so greatly needed in connection with wool production problems in this country.

(6) $10,000 for Household Equipment Studies

(a) This is a new study. The aim of this study is to determine the efficiency of household equipment of different types under different conditions of use. The industries are in some cases making such studies, but there is need for a disinterested agency to work on these problems from the point of view of the housewife in order to provide her with the necessary information for the wise selection and efficient use of these expensive additions to household machinery.

(b) The plan of the Department will be:

To set up an equipment laboratory for the study of definite equipment problems. Specialists in this field will be appointed to make comparative research studies which will not only enable us to keep in touch with what the industries are doing but to interpret information intelligently to the housewife, which information will enable her to make wise choice and efficient use of household equipment.

Activities under Appropriation for Home Economics Investigations:

The research work of the Department in home economics is conducted under this appropriation. No field stations are maintained, the work all being done in Washington. The investigations now being conducted relate to:

Foods and Nutrition Investigations: (1) Collection of data on food composition. (2) The determination of the vitamin content of food under Household Methods of preparation and storage. (3) A study of the cooking quality and palatibility of various kinds of meats and vegetables. (4) Developing recipes for more satisfactory use of a wide variety of foods. (5) Working out experiments to prevent food spoilage through canning, pickling, preserving, and refrigerating. (6) An investigation of household problems.

Economics Investigations: The collecting of facts which will serve as a basis for setting up suggested family budgets and money expenditure scales for individuals of different age and sex; for suggesting an efficient distribution of the homemaker's time under different financial and social conditions, and for determining the advantages of various types of labor saving equipment for the home. A study of buying habits of women with particular reference to food marketing.

Textiles and Clothing Investigations: (1) Wool fabric deterioration resulting from wear and laundering. (2) Cotton fabric deterioration affected by temperatures of laundering and ironing. (3) Influence of wool grades on durability and other physical properties of blankets. (4) Wearing qualities of bed sheeting as influenced by grade and staple of cotton. (5) Sizing formulae for restoring original finishes to various types of cotton materials. (6) Designs for children's clothing suitable from the standpoint of ease of laundering and making, of habit formation and hygienic qualities. (7) Designs for clothing and household articles which are especially suitable for the use of American-made cotton fabrics.

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PLANT QUARANTINE AND CONTROL ADMINISTRATION

(a) GENERAL ADMINISTRATIVE EXPENSES

Appropriation, 1931	$73,000
Brookhart Act Adjustment	940
Total, 1931	73,940
Budget, 1932	88,000
Increase	14,060

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
General Administration	$73,000	$73,940	$88,000	$14,060(1)

The increase of $14,060 in working funds is submitted for the following purpose:

(1) $14,060 for the employment of technical assistance to advise on matters relating to sterilization and disinfection of plant products; and to coordinate the methods used in supervising the disinfection and sterilization of plants and plant products to comply with the requirements of various Federal quarantines.

(a) To carry out the provisions of the Plant Quarantine Act, and to prevent the importation into, or spread within the United States of major plant pests or diseases, new to or not widely distributed therein, it is necessary to regulate the movement of plants and plant products likely to carry such pests. To eliminate the risk of dissemination of plant pests and at the same time allow the greatest possible commercial distribution of products likely to carry them, provisions for sterilization or disinfection of such articles is included in regulations supplementary to various Federal quarantines. A review of all the requirements now in force is needed (1) to be sure that the commercial application of the requirements is giving necessary protection; (2) to determine whether modifications of any of the requirements are advisable and can be made with safety; and (3) to determine if the Industry can economically meet the necessary safeguards.

The applying on a commercial scale of the treatments required by Federal quarantines form an added expense to production and distribution of regulated articles. This expense must be borne by the Industry. During the fiscal year 1930 more than $609,000 were collected by commercial firms who fumigate cotton and cotton waste to meet the requirements of the Federal quarantine regulating the entry of such products to prevent the introduction of the pink bollworm. Eliminating the switching and handling charges, which

together amount to a considerable sum, importers paid, during the fiscal year 1930, more than $67,000 for the fumigation of freight cars entering United States at various Mexican ports. Large sums are expended annually by nurserymen in sterilizing soil around the roots of nursery stock to comply with quarantine regulations promulgated to prevent the spread of the Japanese beetle.

(b) The plan of the Department will be:

To employ technical assistants to devise ways which will make the commercial application of these treatments safer and more economical. They will test, on a commercial scale, new methods worked out as a result of investigations conducted by research bureaus of the Department. They will also aid in the coordination and standardization of the methods used in supervising the disinfection and sterilization of plants and plant products moved in compliance with the various Federal quarantines.

(c) Present work:

Although the sterilization and disinfection of plants and plant products is required by many Federal quarantines, and the work done to meet these various requirements is supervised by inspectors employed under the funds appropriated for the enforcement of such quarantines, no funds are now available to review and coordinate the work as a whole. At the present time, therefore, no funds are expended in carrying on this important work. There is a wide variation in these activities and the localities where the work is done are widely separated. At present it is impossible to coordinate all features connected with the disinfection and sterilization of articles regulated by Federal plant quarantines. The work here outlined will have a direct and important relation to many of the activities of this Bureau.

Activities under the appropriation for general administrative expenses.

The funds available for the fiscal year 1931 are used for the payment of salaries and expenses of the general administrative staff.

(b) ENFORCEMENT OF FOREIGN PLANT QUARANTINES

Appropriation, 1931	$730,000
Brookhart Act Adjustments	5,520
Total, 1931	735,520
Budget, 1932	800,000
Increase	$ 64,480

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increases W.F.	Increases U.A.S.
Import & Permit Service.....	$66,978.38	$ 72,770	$ 72,850	----	$ 80
Port Inspection Service.....	233,881.52	284,080	306,850	$22,410(1)	360
Mexican Border Insp. Service	197,523.44	282,755	318,055	35,000(2)	300
D.C. Inspection Service	30,369.61	34,510	34,580	- - -	70
Field Inspection Permit Material	8,053.09	21,305	21,365	- - -	60
Hawaiian Inspection Service .	13,047.93	18,600	18,600	- - -	--
Porto Rican Inspection Service	17,296.03	21,500	27,700	6,200(3)	--
Total	$567,150.00	$735,520	$800,000	$63,610	$870

The increase of $64,480 is submitted for the following purposes:

$870 under-average Salary Grade Adjustments.

$63,610 increase in working funds, as follows:

(1) $22,410 for the strengthening of inspection service at maritime and Interior Ports of Entry, by placing one inspector each at Blaine, Washington, Port Huron, Mich., Rouses Point, N.Y., Newport News, Va., and four inspectors at New York, N.Y.

Plant quarantine regulations of the Dominion of Canada provide for the entry into Canada of certain plants and plant products which, because of the likelihood of such products carrying injurious plant pests or diseases, are excluded from entry into the United States. Our Federal quarantine regulations also prohibit or regulate the movement into the United States of certain plants and plant products produced in Canada. There has been a marked increase in transportation at various ports along the Canadian border with the attendant risk of the entry of plants or plant products which may be the means of introducing new pests into the United States. It is very important that provision be made for the better enforcement of plant quarantines on the Canadian Border. To help meet this situation plant quarantine inspectors should be stationed at the following ports: Blaine, Wash., Port Huron, Mich., Rouses Point, N.Y.

Blaine, Washington, is both a maritime and a border port. During the year 1929, 118 vessels direct from foreign ports and 127 coast-wise vessels arrived at this port. It is located only a few hours distance from Victoria, British Columbia, Canada's largest Pacific maritime port, through which fruits and vegetables may enter Canada from foreign countries. Over 650,000 automobiles entered the United States from Canada at the port of Blaine during 1929. At present there is no plant quarantine inspector at Blaine.

Port Huron, Michigan, is likewise a port entered both by water and land. During the calendar year 1929, 194 vessels from foreign ports touched first at Port Huron. Besides carrying cargo these vessels transported 632,712 passengers. In addition to the passengers arriving by boat over 77,000 passengers entered that port by automobile and train. Prior to the recent completion of a bridge and a tunnel between the United States and Canada it was possible for the inspectors located at Detroit to make necessary plant quarantine inspections at Port Huron. Under the present conditions it is no longer possible to do this, and no plant quarantine inspector is available for work at Port Huron.

Rouses Point, New York, is a port along the Canadian boundary through which a large part of traffic enters the United States from Montreal, the largest maritime port of Canada. No plant quarantine inspector is located at this important point and there is an opportunity that prohibited plants and plant products including fruits and vegetables from foreign countries in which the Mediterranean fruit fly is known to exist may, without detection, enter the United States through this port.

Newport News, Va. No plant quarantine inspectors are stationed at certain maritime ports and in these places there is ample opportunity for prohibited plants and plant products to enter the country without detection. Newport News, Va. is such a port. During the fiscal year 1930, 118 vessels direct from foreign ports and 658 foreign vessels from foreign ports coming via United States ports arrived at Newport News. These vessels come from practically all parts of the world and while some merely take on coal, others load and unload merchandise. At present none of these vessels are given an inspection by a plant quarantine officer and we receive only an incomplete list of their cargoes and stores. It is important that an inspector be placed at this port.

New York, N.Y. The volume of perishable products requiring inspections as a condition of entry arriving at the port of New York is so great that it is impossible to give more than a hurried examination of a small percentage of products regulated by the various plant quarantines. This type of inspection is very unsatisfactory and does not afford adequate protection. It may result in the introduction of injurious plant pests. The force available at New York is insufficient and it is impossible for plant quarantine inspectors to inspect all foreign vessels entering that port. During the fiscal year 1929, one thousand foreign vessels entering the port of New York received only such casual and incidental inspection for plants and plant products as could be made by inspectors of the Customs Service. The inspection force at New York should be increased in order to assure the enforcement of the quarantines which are designed to prevent the entry of injurious insect pests and plant diseases.

(2) $35,000 to provide for the construction of a fumigation house at Presidio, Texas.

A railroad bridge has been constructed across the Rio Grande river at Presidio, Texas. The tracks leading to this bridge have been completed and it is expected the first train will be operated over this railroad on November 1st. The completion of this bridge will provide railroad facilities through the port of Presidio and make it necessary to provide means of fumigating railway cars coming from Mexico utilized in handling freight. With the carrying out of plans now under way and the forming as it does a more direct line to larger cities in the midwestern part of the United States, it is expected and anticipated that within a comparatively short period there will be heavy rail traffic through this port.

While it is expected that a small fumigation unit can effectively provide necessary disinfection of freight cars entered from Mexico during the early period of the operation of this railroad when it is expected that traffic will be comparatively light, such a method of disinfection cannot be used, without undue delay, inconvenience and loss to shippers, when the volume of traffic increases. To meet this condition it is essential that a fumigation house similar to those erected at other border ports be constructed early in the coming fiscal year. Such a house will provide necessary facilities for the disinfection of cars and thus give the necessary protection from the introduction of plant pests from Mexico.

(3) $6,200 to strengthen the Federal plant quarantine inspection service in Porto Rico:

To prevent the entry of plant pests, it is especially desirable that all plants and plant products sent to the mainland from Porto Rico be inspected prior to shipment. In order that this inspection may be most efficient it should be based on a knowledge of conditions within groves and fields. Fruits, vegetables and other plant products intended for shipment to the mainland are inspected in Porto Rico primarily to prevent the introduction of plant pests. The making of these inspections in Porto Rico also materially benefits the shipper as it permits the prompt release of perishable products when they enter ports on the mainland.

The recent activities in Porto Rico in the production of vegetables and the shipment of large quantities of vegetables to the mainland has very materially increased the work incident to the inspection of plant material leaving this territory. Recent information indicates that this type of agriculture will be developed to even a greater extent.

The present inspection force is inadequate to make needed grove and field inspections. It is now possible to make only such inspections as those which can be made on docks or in packinghouses. During the rush of the shipping season it is impossible to examine, even by this method, more than a very small percentage of the fruits and vegetables shipped. Such sample inspection does not give necessary protection and it is important that the inspection service be strengthened.

The increase will be used for the employment of two assistant plant quarantine inspectors and for travel and incidental station expense.

Activities under the Appropriation for the Enforcement of Foreign Plant Quarantines

The work done under this item is to prevent the entry into the United States of injurious insects, plant diseases, and other pests by controlling and safeguarding the entry of plants and plant products. It involves the enforcement of (1) twenty-three foreign quarantines and regulatory orders issued under the Plant Quarantine Act of 1912; (2) Rules and Regulations Governing the Entry into the United States of Railway Cars and Other Vehicles, etc., from Mexico; (3) the Act of 1905 governing the importation of living insects into the United States and (4) Regulations Governing the Shipment of Fruits and Vegetables to the Mainland from Hawaii and Porto Rico.

A number of important interceptions have been made at various ports during the fiscal year 1930. The following few examples are of interest. A full list, however, would include other injurious insect pests and plant diseases. Many specimens of the Mediterranean fruit fly were intercepted. The fruits and vegetables containing these specimens came from eight foreign countries and from the Territory of Hawaii and the Dominion of Canada. The interceptions were made at eight different ports and from twelve kinds of hosts. In enforcing the quarantines along the Mexican border the Mexican fruit worm was intercepted many times at seven ports. These specimens were found in seven different kinds of host fruits. Seventeen lots containing specimens of the pink bollworm were intercepted at seven ports. These shipments came from ten different countries, including Brazil, India, Egypt, China and Haiti.

(c) TRANSIT INSPECTION

Appropriation, 1931	$40,000
Budget, 1932	43,000
Increase	3,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Transit Inspection	--	$40,000	$43,000	$2,800	$200

The increase of $3,000 is submitted for the following purposes:

$200 for Under-average Salary Grade Adjustments.

$2,800 increase for strengthening the transit inspection service.

The funds now available for transit inspection are not sufficient to effectively control the movement of products likely to carry pests to uninfested regions. The increase is needed to establish transit inspection, during parts of the year, at one or two additional transfer centers and to station additional inspectors at certain points where this work is now conducted.

Quarantine regulations on certain types of plant pests can be enforced most effectively and economically only by the inspection of regulated articles at transfer or distribution points. Road stations maintained to regulate vehicular traffic do not provide for inspection of regulated articles moving by rail. It is unfeasible and economically impracticable to check at origin all rail shipments billed from points within regulated areas to points outside thereof to determine compliance with quarantine

restrictions. The Federal Department makes no provision for the inspection at destination of plants and plant products regulated under the various domestic quarantines, and only a few States provide such inspection. The inspection of plants and plant products at strategic transfer points is the only effective and economical way of preventing unauthorized movement by rail of products regulated under various domestic quarantines. The transit inspection service, therefore, provides a second line of defense in enforcing Federal quarantines, and materially reduces the number and volume of articles moved in violation thereof. This service thus materially aids in preventing contraband material, which may be infested, from reaching points remote from the area in which pests are known to occur.

The item "Transit Inspection," was established in the Act making appropriations for the fiscal year 1931. Funds available for this year permit the placing of transit inspectors, at least part of the year, at only ten important transfer points. The movement of nursery stock, plants and other products regulated by Federal quarantines is to a large extent seasonal; the largest volume of movement, usually occurs during the spring and fall. During the rush season it is impossible to inspect all such material at the places where we have inspectors. Furthermore it is important that this service be extended to other important transfer centers.

Activities under the Appropriation Transit Inspection

This item provides for the inspection in transit of materials regulated by the various Federal quarantines. The work is carried on in cooperation with railroad, express and post office officials. The cooperation of the employees of these services is essential and freely given. They render very material aid in routing, for inspection, packages containing plants or plant products. Without this assistance it would be impossible to check on the large number of shipments moving through these busy transfer centers. During the first four months of the present fiscal year a large number of violations of domestic quarantines have been detected by this method of inspection, and over 600 shipments which were moving in violation of these quarantines have been prevented from proceeding to destination. Included in these violations was one shipment containing approximately thirty bushels of corn moving in violation of the European corn borer quarantine and consigned to a town located in the corn producing area of Nebraska. A large number of uninspected packages, some of them containing soil, moving in violation of the quarantine on account of the Japanese beetle were also included in the number of interceptions referred to above. The intercepted contraband articles also included several lots of bulbs moving in violation of the Narcissus bulb quarantine, and found at destination or enroute infested with bulb flies.

(d) PREVENTING SPREAD OF PINK BOLLWORM

Appropriation, 1931	$497,000
Budget, 1932	497,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Preventing Spread of Pink Bollworm	$1,050,120	$ 497,000	$ 497,000

Activities under this Appropriation

The funds appropriated under this item provide for the regulatory and control work to prevent the spread of the pink bollworm. The work includes (1) scouting to determine the presence or absence of the pink bollworm at points outside of the area regulated; (2) inspections to determine the degree of infestation at points within the regulated area; and (3) the enforcement of quarantine and regulatory measures, involving the supervision of the sterilization of cottonseed, the fumigation of cotton lint and linters, the compression of cotton lint, the supervision of oil mills, and the maintenance of road stations.

During the last fiscal year a number of modifications have been made in methods of scouting and as a result of these improvements the scouting work is more efficient than in previous years. Other changes have been made which permit more effective and economical operations. These new devices and modifications of the program make it possible to carry on a considerable larger amount of work with the same amount of money, and although the regulated area is larger it has been possible to give adequate protection to the uninfested regions and do necessary inspections without additional funds. The first cleaner gin trash is a favorable place to find larvae of the pink bollworm. The development of a machine which reduces the volume of this trash and leaves the pink bollworm larvae in the residue has made it possible to examine large volumes of such trash and detect infestations which could not be readily found without a great amount of field inspection.

(e) PREVENTING SPREAD OF DATE SCALE

Appropriation, 1931	$65,000
Brookhart Act Adjustments	460
Total, 1931	65,460
Budget, 1932	65,510
Increase	$ 50

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Preventing Spread of Date Scale	$78,700	$65,460	$65,510	----	$ 50

The increase of $50 is for under-average salary grade adjustments.

Activities under Appropriation Preventing Spread Of Date Scale

The funds appropriated under this item provide for the eradication of the date palm scale and the prevention of its spread by the enforcement of quarantine regulations. The Parlatoria date scale has been found in limited areas in California and Arizona and the work of eradication is carried on in cooperation with these States. The States of California and Arizona have continued their wholehearted cooperation in the eradication work and plan to provide, during the fiscal year 1932, funds in the same ratio as during the fiscal year 1931. Very satisfactory progress is being made in this eradication effort. Recent inspections have failed to disclose presence of the scale in a number of localities where it was previously known to occur.

(f) PREVENTING SPREAD OF THURBERIA WEEVIL

Appropriation, 1931	$34,300
Brookhart Act Adjustments	200
Total, 1931	$34,500
Budget, 1932	34,650
Increase	$ 150

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Preventing Spread of Thurberia Weevil	$29,845	$34,500	$34,650	---	$150

The increase of $150 is for under-average salary grade adjustments.

Activities Under Appropriation Preventing Spread of Thurberia Weevil

The work done under this item deals with regulating the movement of cotton, cottonseed and other articles likely to carry this pest into uninfested regions. The Thurberia weevil is a native variety of the Mexican cotton boll weevil and occurs in limited areas of the State of Arizona. Under natural conditions this native insect lives on wild Thurberia cotton. With the production of cultivated cotton in this area it has attacked this crop. It has demonstrated capacity to breed in cultivated cotton and because of its ability to live under arid conditions is a serious menace to cotton grown under semi-arid conditions. During the last year the population and injury caused by this pest has increased in certain cultivated fields, but it has not spread into new areas.

(g) PREVENTING SPREAD OF GIPSY & BROWNTAIL MOTHS

Appropriation, 1931	$647,500
Brookhart Act Adjustments	1,080
Total, 1931	$648,580
Budget, 1932	648,580

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Preventing Spread of Gipsy and Browntail Moths	$659,825	$648,580	$648,580

Activities under Appropriation
Preventing Spread of Gipsy and Browntail Moths

The work done under this item has to deal with the enforcement of quarantine and regulatory work on the gipsy and browntail moths; the extermination of the gipsy moth from the present limited infested area in the State of New Jersey; the maintaining as a barrier zone of a strip of territory twenty to thirty miles wide along the western border of the New England States and the eastern border of New York State from Long Island to Canada. In this zone effort is made to locate and exterminate all colonies and thus prevent the westward spread of this pest into uninfested regions.

During the past fiscal year an infestation of the gipsy moth was found in a limited area of Long Island. In cooperation with the State of New York work was begun to eradicate the moth from this area and very satisfactory progress has been made. The extermination program in New Jersey is likewise progressing very satisfactorily. No recent infestations have been found, and it has been possible to recently release from regulation a part of the territory which had been infested.

(h) PREVENTING SPREAD OF EUROPEAN CORN BORER

Appropriation, 1931	$1,000,000
Brookhart Act Adjustments	920
Total, 1931	$1,000,920
Budget, 1932	950,000
Decrease	$ 50,920

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Decrease
Preventing Spread of European Corn Borer	$938,094	$1,000,920	$950,000	$50,920

The decrease of $50,920 is explained as follows:

Without increasing the risk of spread of the corn borer it has, during this season, been possible to modify the regulations restricting the movement of certain products heretofore regulated on account of this pest. The removal of the requirement for inspection and certification of these products, when moved to points outside of the regulated area, make it possible to reduce the amount of funds required for the control and prevention of spread of the European corn borer for the fiscal year 1932. The general program of control and quarantine enforcement is, however, not modified. The other expenses connected with scouting, control and enforcement work necessary on account of the European corn borer remain substantially the same as during the fiscal year 1931.

Scouting conducted during the summer of 1930 shows that there has been comparatively little increase in the area infested by the corn borer. During the season of 1930 weather conditions within the western area have been unfavorable for the development of the corn borer. With the exception of a few fields there has been no commercial damage in the area infested by the one-generation form. In parts of the area infested by the two-generation form, especially in sections where no effort has been made to control the pest, there has however been a limited amount of commercial damage.

The control and regulatory work conducted on account of the European corn borer has without doubt been effective in prohibiting long-distance spread as well as retarding the spread to points immediately adjacent to the infested area. The enforcement of the quarantine against this pest is serving to protect the main corn producing regions of the United States as well as important truck crop regions in the Atlantic Coastal plain. In the main corn-producing regions south and west of the regulated area more than fifty million acres are devoted to the production of corn, while only twenty million acres are included in the area known to be infested. The Atlantic Coastal Plain, outside of the regulated area, contains large acreages devoted to the production of sweet corn and truck crops which

are attacked by the corn borer. Many canneries are located in this area and large investments are involved in the production and canning of sweet corn. The two-generation form of the corn borer offers a particular menace to corn and certain truck crops produced in this area and an effort should be made to protect this area from infestation.

Activities under Appropriation
Preventing Spread of European Corn Borer

This item provides for regulatory and control work conducted against the European corn borer. This work involves the enforcement of the quarantine against this pest; scouting to detect the spread of the borer into uninfested regions, and inspections to determine its abundance in the area under regulation; and in cooperation with the States, the carrying on of cleanup operations in isolated infested areas more or less remote from the area which is generally infested.

(i) PREVENTING SPREAD OF JAPANESE BEETLE

Explanation of change in language: The elimination of the words "and Asiatic" and the letter "s" from the word "beetles," is recommended because the Federal quarantine on account of the Asiatic beetles has been rescinded.

Appropriation, 1931	$475,000
Brookhart Act Adjustments	160
Total, 1931	$475,160
Budget, 1932	445,000
Decrease	$ 30,160

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Decrease
Preventing Spread of the Japanese beetle	$438,995	$475,160	$445,000	$30,160

The reduction of $30,160 represents the funds which have been allotted for work pertaining to the enforcement of the quarantine on account of the Asiatic beetles.

The lifting of the quarantine regulating the movement of products likely to carry Asiatic beetles makes possible a slight reduction in the amount of work done with funds provided under this appropriation. The amount required to carry on necessary work on the control and prevention of spread of the Japanese beetle remains substantially the same as that allotted to this purpose for the fiscal year 1931.

As a result of investigations and surveys conducted during the summer and autumn of 1929 the Department determined that the habits and economic status of the two Asiatic beetles which had previously been covered by quarantine was not such as to warrant the maintenance of a Federal quarantine on account of these two insects. The quarantine

on account of the Asiatic beetles was, therefore, rescinded, effective March 1, 1930. The principal injury caused by the Asiatic garden beetle (Aserica castanea Arrow) and the sole injury caused by the Asiatic beetle (Anomala orientalis Waterhouse) is to lawns and grass plots. Both of these beetles can be effectively controlled by methods and materials now available for the treatment of lawns and grass plots. The rescinding of the quarantine on account of the Asiatic beetles eliminated work incident to its enforcement and permitted savings approximating $16,000 for the fiscal year 1930 and savings approximating $30,000 for the fiscal year 1931. It also makes possible a reduction of $30,000 for the fiscal year 1932.

During the summer of 1930 small infestations of the Japanese beetle were found in more than twenty localities outside of the regulated area. Many of these infestations, however, were of such a nature that it was unnecessary to make extensive modifications of the quarantine on account of this pest. Although there has been some increase in the area known to be infested by the Japanese beetle, adjustments in the program of work will permit savings sufficient to provide funds for those expenses occasioned by the extension of the regulated area. These savings will also provide funds for such additional supervision of treatment of products produced in nurseries, located within the regulated area, and recently infested with the beetle.

Activities under Appropriation for the Control and Prevention of Spread of the Japanese Beetle

This appropriation provides funds for the enforcement of the quarantine on account of the Japanese beetle. This work involves inspection and certification of articles regulated on account of this pest; the supervision of treatment of nursery stock to meet quarantine requirements; the supervision of cleanup work at isolated points where incipient infestations have been located; scouting to determine presence of the beetle at localities outside of the regulated area; and inspections to determine the occurrence within the infested area, in relation to nurseries and other establishments concerned in the interstate movement of nursery stock.

(j) PREVENTING SPREAD OF WHITE PINE BLISTER RUST

Appropriation, 1931	$10,000
Brookhart Act Adjustments	200
Total, 1931	$10,200
Budget, 1932	10,400
Increase	$ 200

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Preventing Spread of White Pine Blister Rust	$26,305*	$10,200	$10,400	---	$200

*Includes $17,000 which, in 1931, was transferred to the item "Transit Inspection."

The increase of $200 is for Under-average Salary Grade Adjustment

Activities under the Appropriation
Preventing Spread of White Pine Blister Rust

The work done under this appropriation deals with the enforcement of the quarantine on account of the white pine blister rust and is carried on in cooperation with the States affected. It provides for the inspection of nurseries in which pines susceptible to this disease are grown. Most of these nurseries are located in Washington, New York, and the New England States. The quarantine on account of the white pine blister rust provides for the regulation of the interstate movement of five-leafed pines, currant and gooseberry bushes which might carry infections to new localities.

(k) PREVENTING SPREAD OF PHONY PEACH

Appropriation, 1931.....$12,000
Budget, 1932..... 12,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Preventing Spread of Phony Peach	$12,866*	$12,000	$12,000

*Includes $3,000 which, in 1931, was transferred to the item "Transit Inspection."

Activities under the Appropriation
Preventing Spread of Phony Peach

The funds appropriated under this item provide for the enforcement of the Federal quarantine on account of the phony peach disease. This work involves the regulation of the movement of nursery stock likely to carry infections into uninfested regions; and scouting to determine the presence of the disease within or adjacent to commercial nurseries.

(1) PREVENTING SPREAD OF MEXICAN FRUIT WORM

Appropriation, 1931	$115,000
Brookhart Act Adjustments	300
Total, 1931	$115,300
Budget, 1932	125,000
Increase	$ 9,700

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Preventing Spread of Mexican fruit worm	$100,277	$115,300	$125,000	$9,660	$40

The Increase of $9,700 is submitted for the following purposes:

$40 Under-average Salary Grade Adjustments.

$9,660 increase in working funds to provide for additional scouting and inspection incident to the eradication of the Mexican Fruit Worm.

During recent years a very large number of new citrus plantings have been made within the area quarantined on account of the Mexican fruit worm. It is conservatively estimated that for the crop season 1931-32 more than one million additional trees will reach bearing age. This will nearly double the amount of citrus fruit moving from the quarantined area and will very greatly increase the amount of work incident to field inspections and certification. To meet this expansion in production and crop movement it will be necessary to employ additional assistants in order to make the necessary grove and packing-house inspections.

Fruit from the interior of Mexico infested with the Mexican fruit worm can be found, practically throughout the year, in the Mexican markets across the International boundary from the citrus area regulated on account of this pest. Adult flies are frequently found in the markets and gardens of the City of Matamoros. The occurrence of infested fruit and adult flies on the Mexican side of the river subjects the area quarantined on account of the Mexican fruit worm to the danger of continual reinfestation. It emphasizes the necessity of maintaining adequate grove inspection and full compliance with quarantine and control regulations. The continuation of such inspections and regulations are necessary in order to keep this pest out of the quarantined area. The prevention of reinfestation not only benefits the area regulated but gives necessary protection to the other areas of the United States which produce citrus and such deciduous fruits as are hosts of the Mexican fruit worm.

Activities under the Appropriation Preventing Spread of the Mexican Fruit Worm

The funds appropriated under this item are used in enforcing the quarantine regulations against the Mexican fruit worm, to prevent reinfestation, and in maintaining eradication results already effected. This work involves inspection of groves to determine (1) continued freedom of infestation; (2) the maintenance of sanitary requirements such as the picking up of drops and culls; and (3) the maintenance of a non-host period during the summer months. It also involves the supervision of packing houses to see that they meet sanitary requirements provided by the regulations; and for the inspection and certification of host fruits leaving the regulated area.

During November, 1929, incipient infestations of the Mexican Fruit worm were found in three backyard plantings in the City of Brownsville. These incipient infestations were immediately eradicated and intensive inspections have failed to reveal further evidence of the pest.

During January, 1930, much of the citrus fruit produced within the regulated area was injured by an unusual and severe freeze. In addition to preventing the marketing of some 2,000 cars of fruit this freeze caused considerable injury to young growth and newly planted trees. By preventing the marketing of the crop it reduced the amount of work connected with the inspection and certification of last year's crop.

(m) CERTIFICATION OF EXPORTS

Appropriation, 1931	$30,000
Brookhart Act Adjustments	300
Total, 1931	$30,300
Budget, 1932	30,500
Increase	$ 200

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Certification of Exports	$25,802	$30,300	$30,500	---	$200

Increase of $200 is for Under-average Salary Grade Adjustments.

Activities under the Appropriation Certification of Exports

This item provides for the inspection at various ports and certification, as to freedom from injurious insect pests and plant diseases, of fresh fruits, vegetables and plants, etc., intended for export to meet the sanitary requirements of foreign countries.

During 1930 there has been a distinct increase in the shipment of fresh fruits and vegetables to certain foreign countries and a corresponding increase in the number of requests for inspection and certification. The $11,447.50 in fees collected and deposited in the Treasury for this service during the fiscal year 1930 exceeded 1929 collections by more than $2,400.

(n) ERADICATION AND CONTROL OF THE MEDITERRANEAN FRUIT FLY

Appropriation, 1931	$1,740,000*
Brookhart Act Adjustments	400
Total, 1931	$1,740,400
Budget, 1932	None

*This appropriation was immediately available and $35,000 was expended during the fiscal year 1930.

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932
Eradication and Control	$4,331,795 (a)	$1,705,400 (a)	---

(a) Difference between figures in project statement and those shown in formal schedules of estimated expenditures as shown in 1932 Budget is due to arrangements made with the State of Florida regarding the payment from State funds of certain liabilities which had originally been set up against Federal funds.

Remarkable and very gratifying progress has been made in the eradication of the Mediterranean fruit fly in Florida. It has not as yet been possible to forecast with any accuracy the amount of funds which might be required, during the fiscal year 1932, for work incident to the eradication of, or investigations on, this pest, and no estimate is included in the Budget.

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GRAIN FUTURES ADMINISTRATION

ENFORCEMENT GRAIN FUTURES ACT

Appropriation, 1931	$155,000
Second Deficiency Act, 1930	17,640
Brookhart Act adjustments	840
Total, 1931	173,480
Budget, 1932	200,000
Increase	26,520

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement Grain Futures Act	$139,042	$173,480	$200,000	$25,500	$1,020

The increase of $26,520 is submitted for the following purpose:

$1,020 Under-average Salary Grade Adjustments.

$25,500 increase in working funds, as follows:

(1) $15,500 for work to be handled by the Washington office:

To strengthen the auditing phase of supervision work and expand the studies of grain marketing in an effort to obtain greater knowledge concerning influences that operate on grain prices, including stock market influences, other commodity markets, visible supply, grain movements, and other factors, both domestic and foreign. An effort will also be made to keep closer watch on the transactions in grain futures contracts handled by commission houses outside of Chicago.

The necessity for more extensive supervision and the general expansion of activities make it necessary to provide additional help at Washington. These activities include the various phases of work incident to the procedure of prosecuting violations. It is planned to transfer one chief accountant from Chicago to Washington as a means of inaugurating a more effective direction over the field accounting activities and to obtain expert assistance otherwise in matters involving this phase of the work.

Recent developments in the grain markets have demonstrated that really effective supervision cannot be maintained without more frequent examinations of the books and records of exchange brokers. This fact has forcibly been brought out as a result of short selling by foreign interests, which compelled the Department to increase its investiga-

tional activities to determine the full extent of such selling and its influence on the price of domestic grain. These activities apply particularly to commission houses outside of Chicago and especially to those located at New York and other eastern cities. It is most important that these investigations be extended much further than can be handled by our present organization, and it now appears certain that the exigencies arising from transactions of this character will make it necessary to curtail some other important work and to set aside approximately $2,000 to deal with this situation the balance of the year.

(2) $10,000 to carry on special investigations and prosecutions:

This work concerns certain irregularities practiced by grain brokers in connection with the handling of customers' accounts. The work is highly technical and of confidential nature and is intended to curb certain unethical and/or illegal trade practices which tend to undermine the very fundamentals of future trading. This is a new phase of work which developed during the latter part of the fiscal year 1930, as a result of complaints and examinations of brokers' accounts. Numerous cases of irregularities have already been uncovered, which require further action by the Department in order that customers may be given the protection intended by the Grain Futures Act.

Up to the present time hearings have been held in two cases and briefs are now being prepared for submission to the Commission created by the Grain Futures Act for decision. The very nature of this work makes it essential that the Department continue to take immediate action on all complaints that appear justified and to follow through with the most important cases to the extent that available funds will permit without seriously sacrificing other important work. It is estimated that approximately $2,500 will be devoted for this work during the current year. With the additional funds requested, every effort will be made to follow through to completion those cases which have already developed; to continue investigations along this line and to prosecute wherever justified in all cases which show evidence of irregularities in the handling of customers' orders.

Activities under Appropriation for the Enforcement of the Grain Futures Act

The work under this appropriation involves the supervision of trading in grain futures as carried on by twelve (12) contract markets. Supervisional activities are directed through six (6) field offices located at Chicago, Minneapolis, Kansas City, Omaha, Seattle, and Sacramento. The last named office is handled in cooperation with the California State Department of Agriculture. Field office activities fall under two main divisions: (1) Market Supervision, and (2) Investigation and Research, the latter being divided under two subheads, (a) Economic and (b) Accounting.

Specific lines of work, which have been of particular interest recently, include: (1) examination of books and records of New York houses, which brought out the

facts concerning the recent short selling activities of foreign interests, (2) investigations required by Senate Resolution #40 and conclusions as published under Senate Document 246 (70th Congress) and Senate Document 123 (71st Congress), parts 1 and 2, respectively, (3) hearings held at Chicago, Illinois, concerning irregularities in the handling of customers' accounts by grain brokers, (4) recent studies concerning trading in corn futures as published in Technical Bulletin 199-T, (5) special studies on the subject of "Wheat Futures" and "Hedging" - Theory and Practice, which will soon be published in bulletin form.

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FOOD AND DRUG ADMINISTRATION

(a) GENERAL ADMINISTRATIVE EXPENSES

Appropriation, 1931	$ 104,000
Brookhart Act adjustments	1,455
Total, 1931	105,455
Budget, 1932	105,685
Increase	230

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
General Administrative expenses ..	$103,969	$105,455	$105,685	$---	$230

The increase of $230 is submitted for Under-average Salary Grade Adjustments.

Activities under this Appropriation

To provide for overhead expenses, such as general supervision, accounting, editorial work, purchase and distribution of supplies, filing, recording, mechanical work and the like, which are paid from this appropriation.

(b) ENFORCEMENT OF THE FOOD AND DRUGS ACT

Appropriation, 1931	$ 1,125,000
Brookhart Act adjustments	8,892
Total, 1931	1,133,892
Budget, 1932	1,325,000
Increase	191,108

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Supervision of interstate and foreign commerce in foods and drugs	$ 20,013	$ 20,545	$ 20,685	$ ---	$ 140
Review and presentation of evidence in court cases	50,044	50,305	50,655	---	350
Food control investigations .	115,091	116,030	128,920	12,000	890
Drug control investigations .	73,853	104,775	181,025	75,000	1,250
Inspection of interstate commerce in foods and drugs ...	560,722	620,807	695,602	70,000	4,795
Inspection of imported foods and drugs	209,922	221,430	248,113	24,973	1,710
Totals	1,029,645	1,133,892	1,325,000	181,973	9,135

The increase of $191,108 is submitted for the following purpose:

$9,135 Under-average Salary Grade Adjustments.

$181,973 increase in working funds, as follows:

The increase of $181,973 in this appropriation is necessary to check the development of certain violations of the law in the food and drug industries that threaten serious consequences to consumers and to the industries involved. The appropriation for Enforcement of the Food and Drugs Act has not kept pace with the enormous growth of the manufactured food and drug industries which has occurred since 1914. Exclusive of increases allowed for reclassification and Welch Act adjustments, the operating funds and force now available for this work are very little greater than in 1914 although there has been an increase in volume of food and drug traffic during that period of over 40% and in value of over 100%. Not only has the traffic increased enormously but new types of food and drug products have been developed as a result of modern discoveries in nutrition and therapeutics, presenting problems of food and drug enforcement not dreamed of 15 years ago. The increase requested is intended for increasing the necessary supervision over traffic in staple food products and established lines of medicinal preparations and beginning the inauguration of control measures over entirely new lines of food and drug products. The rapid growth of the food and drug industries, the new forms of adulteration that are devised, and especially the ever-increasing proportion of such products that enter interstate or foreign commerce and thus become subject to the act make it impossible for the present personnel and facilities to cover adequately even the more flagrant forms of adulteration that are from time to time revealed by our investigations of trade or consumer complaints or by outbreaks of food poisoning.

The increase is needed for the following purposes:

(1) $24,973 for routine inspection of imported foods and drugs.

It is urgently necessary to increase the personnel and facilities at the larger ports of entry for examining foods and drugs offered for entry into the United States. Not only has there been a gradual increase in the volume and variety of imported products but more intensive inspection has to be given to some products of which the following are instances:

As a result of an outbreak of food poisoning from imported foods and the discovery that certain other imported canned foods are under-processed, it is now necessary to make bacteriological examination of practically all non-acid canned food offered for entry into the United States. This can be done at the present time only by discontinuing the inspection of other products which are probably adulterated or misbranded, though less dangerously so than under-processed canned foods.

(2) $32,700 for increasing the routine interestate inspection and analysis of staple food products.

It is necessary in the enforcement of the food and drugs act to keep under surveillance interstate commerce in a great variety of food products other than those for which specific increases have been estimated. These include flavoring extracts, cereal products, such as alimentary pastes, bread, cake, crackers, breakfast foods and flour, and also chocolate products, coffee, dairy products, eggs, fruit and fruit products, grains and stock feeds, nuts, oils, fats and shortenings, saccharine products, shellfish, spices and condiments, poultry and meat products not under the meat inspection act, and vegetables and vegetable products. It is impossible with the present personnel and facilities to adequately inspect the vast volume of interstate commerce in these food products. Just recently it has been brought to our attention that grave abuses have developed in the dried fruit industry. Heretofore it has been possible to give but very little attention to dried fruits. Both from the point of view of serving the interests of consumers and the interests of the industry itself, it is highly essential that work on dried fruit products be materially extended.

(3) $30,200 for falsely labeled vitamin preparations.

This estimate is for the purpose of checking the rapidly increasing commerce in food and drug preparations, especially preparations for infants and invalids, for which vitamin potency is falsely and fraudulently claimed. Recent discoveries regarding the effect on health, growth and reproduction of certain vitamins found in various foods have led unscrupulous dealers to put on the market many fraudulent preparations for which beneficial potency is falsely claimed. To take action in the cases involving claims of vitamin potency it is necessary to have actual tests made in accordance with scientific technic of the preparations under consideration. No facilities or personnel for this testing can be provided with available funds. The public is being mulcted of enormous sums of money and the health of many individuals endangered through the sale of false and fraudulent preparations in this class. It is estimated that at least $30,200 will be required to provide the personnel and equipment for the necessary testing work involved in controlling the sale of these illegal preparations.

(4) $30,500 for controlling commerce in drug products and medicines intended for human use.

Recent surveys have shown that some drugs prescribed by physicians in the most serious diseases are much below or much above the proper potency. Either is extremely dangerous. Proprietary preparations which are practically worthless are being sold for use in the treatment of most dangerous diseases. Investigations have shown that many so-called

antiseptics widely distributed through the channels of commerce have little or no potency. It is essential that additional medical experts and drug analysts be provided in order that this work may be handled in an adequate manner by more frequent and more extensive surveys of these products.

(5) $30,300 for the biological testing of potent drugs.

Many of the more important drug products, such as aconite, cannibis indica, digitalis, ergot, and the like, must be tested for potency on animals under the direction of pharmacologists by tests, most of which have become official and compulsory within the last few years. There is a rapidly expanding trade in fraudulent glandular preparations. No action can be taken on these preparations until actual tests have been made of their potency. At the present time we have but three men who are qualified to do this work and their time is fully taken up in making tests of a few of the standard drug preparations. It is most essential that this work be extended to include all of the drug preparations that require pharmacological tests, including the allied products of the glandular preparations.

(6) $9,100 for controlling veterinary preparations.

Investigations have shown that many worthless so-called remedies for stock and domestic animals are being sold with false claims as to their curative power. Farmers and stock raisers depending upon these false and fraudulent claims use large quantities of the worthless preparations in the treatment of stock, poultry and other farm animals and thus suffer a loss, not only of the cost of the falsely labeled medicines, but also suffer additional heavy losses of stock, which might be prevented if adequate treatments were used.

(7) $15,100 for spray residue removal.

Additional work is required to insure that the excess spray residue on fruit be reduced to the more rigid tolerance necessary to protect public health and prevent irreparable injury to the fruit industry

that will inevitably result through the action of foreign governments and State and city health officials unless the world tolerance of arsenic is reached and maintained as soon as practicable. The more rigid tolerance established for spray residue on fruit makes it necessary to extend the regulatory work as carried on in the far West to certain fruit growing sections in the middle West and the East. This work involves the inspection of fruit to see that it does not contain any excess spray residue when shipped within the jurisdiction of the Federal food and drugs act. The tolerance has been lowered for the fiscal year 1931 and will be still further lowered for the fiscal year 1932. This work supplements but in no way duplicates the work done by the Bureaus of Entomology, Plant Industry and Chemistry and Soils.

The cost of this work for the fiscal year 1931 is estimated at $43,000. Because of the lowered tolerance for the following year, an additional $15,100 will be required to enable the Department to exercise control over the wider areas affected.

(8) $9,100 for inspection work on fish.

Recent investigations have shown that the canned tuna industry has put up fish that is unfit for food. During recent years the regulatory work on fish under the food and drugs act has been confined chiefly to canned salmon and canned sardines. Considerable improvement has been made in the packing of both canned salmon and canned sardines. However, it is now necessary to give considerably more attention to canned tuna and to canned California mackerel. It is impossible with the present personnel to give adequate attention to the new developments in the canned tuna and canned mackerel industries without neglecting the other fish industries, which require a definite amount of annual inspection.

Activities under Appropriation for Enforcement of Food and Drugs Act

General

This appropriation provides all the expense necessary for enforcing the food and drugs act, commonly called the pure food law (June 30, 1906) 34 Stat., 768-772, U.S.C., 621-624). The purpose of this act is to prevent the shipment in interstate or foreign commerce, and the manufacture and sale in the District of Columbia and other territory in which the Federal Government has jurisdiction, of adulterated or misbranded foods and drugs. To

enforce this act it is necessary to maintain supervision of the enormous volume of foods and drugs shipped in its jurisdiction. This requires the inspection of food factories, and the examination of shipments of foods and drugs, the analysis of samples, and the presentation of evidence in Court.

(c) ENFORCEMENT OF THE TEA IMPORTATION ACT

Appropriation, 1931	$ 43,800
Brookhart Act adjustments	230
Total, 1931	44,030
Budget, 1932	44,380
Increase	350

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement of Tea Act ...	$ 43,292	$ 44,030	$ 44,380	$ ---	$ 350

The increase of $350 is submitted for the following purpose:

$350 Under-average Salary Grade Adjustments.

Activities under Appropriation for Enforcement of Tea Importation Act

To provide for all expenses under the Tea Importation Act (Mar. 2, 1897, 29 Stat. 604, U.S.C., 625, 626). Every consignment of tea imported into the United States is inspected both as to purity and quality. A board of tea experts determines a suitable standard for tea each year, and no tea for beverage purposes is permitted entry into the United States that falls below that standard. Before the enactment of the Tea Importation Act much low grade tea that was unfit for use was sent to the United States.

(d) ENFORCEMENT OF THE NAVAL STORES ACT

Appropriation, 1931	$ 39,500
Brookhart Act adjustments	100
Total, 1931	39,600
Budget, 1932	39,870
Increase	270

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement of Naval Stores Act	$ 39,407	$ 39,600	$ 39,870	$----	$ 270

The increase of $270 is submitted for the following purpose:

$270 Under-average Salary Grade Adjustments.

Activities under Appropriation for Enforcement of Naval Stores Act

To provide for the enforcement of the Naval Stores Act (Mar. 3, 1923, 42 Stat., 1435, U.S.C. 93,94). This act provides that the Secretary of Agriculture "shall examine, if practicable, upon request of any interested person, any naval stores and shall analyze, classify, or grade the same on tender of the cost thereof as required by him, under such regulations as he may prescribe. He shall furnish a certificate showing the analysis, classification or grade of such naval stores, which certificate shall be prima facie evidence of the analysis, classification, or grade of such naval stores and of the contents of any package from which the same may have been taken as well as of the correctness of such analysis, classification or grade and shall be admissible as such in any court."

The Secretary is authorized to purchase from time to time samples of spirits of turpentine and of anything offered for sale as such for the purpose of analysis, classification, or grading, and of detecting any violation of the Act. Naval Stores offered for import or export as well as naval stores that enter interstate commerce are subject to all the provisions of the Act.

(e) ENFORCEMENT OF THE INSECTICIDE ACT

Appropriation, 1931	$ 224,000
Brookhart Act adjustments	1,458
Total, 1931	225,458
Budget, 1932	227,035
Increase	1,577

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Inspection of domestic and import shipment of insecticides and fungicides, development of cases and State cooperation	$ 63,783	$ 64,583	$65,035	$ ----	$ 452
Chemical, microscopic and bacteriologic examinations of insecticides and fungicides (including disinfectants)	103,115	103,705	104,430	----	725
Testing of efficacy of fungicides and action on foliage of fungicides	25,059	25,135	25,310	----	175
Testing of efficacy of insecticides and their action on foliage	31,894	32,035	32,260	----	225
Totals	223,851	225,458	227,035	----	1,577

The increase of $1,577 is submitted for the following purpose:

$1,577 Under-average Salary Grade Adjustments.

Activities under Appropriation for Enforcement of Insecticide Act

To provide for enforcing the Insecticide Act (Apr. 26, 1910, 36 Stat., 335, U.S.C. 95-97). This act places upon the Department the responsibility of regulating interstate shipments and importations into the United States at the various ports of entry, of insecticides and fungicides. The provisions of the law are designed to protect farmers, fruit growers, market gardeners, and stock and poultry raisers from fraudulent, misbranded, and adulterated insecticides and fungicides. Products used to rid the household of insects, and disinfectants, germicides, etc., which are used to combat or kill bacteria also come within the scope of the work. The enforcement of the law has had a marked effect upon the industry engaged in the manufacture and sale of insecticides and fungicides, and each year sees progress in the direction of more truthful statements and a higher quality in most of the products on the market. However, the manufacturing and use of insecticides and fungicides has tremendously increased since the inception of this regulatory work and the Department is constantly confronted with new problems and new products, requiring inspection. Especially important at present are disinfectants, boll-weevil remedies, lice preparations, calcium arsenate, lime-sulphur preparations, and fungicides used on the Pacific coast.

(f) ENFORCEMENT OF THE MILK IMPORTATION ACT

Appropriation, 1931	$ 53,000
Brookhart Act adjustments	30
Total, 1931	53,030
Budget, 1932	53,632
Increase	602

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement of Milk Importation Act	$ 52,893	$ 53,030	$ 53,632	$ ----	$ 602

The increase of $602 is submitted for the following purpose:

$602 Under-average Salary Grade Adjustments.

Activities under Appropriation for Enforcement of Milk Importation Act

To provide for expenses in enforcing the Milk Importation Act (Feb. 15, 1927, 44 Stat., 1103, U.S.C. Supp. 1, 110, 111). The Milk Importation Act provides for inspection both at the source and at the ports of entry. The work of enforcing this Act, therefore, involves the supervision of the sanitary inspection of about 500 Canadian shipping plants and approximately 15,000 dairies, and supervision of the physical examination and in most instances tuberculin test once a year of at least 100,000 cattle, this work being carried out in collaboration with Canadian officials as authorized by the act; it also involves the bacteriological examination and temperature test of sufficient representative samples of all imported milk and cream, to insure compliance with the Act at ports of entry. Milk may be brought into the United States at any port along the Canadian border, but the bulk of the milk and cream comes in through ports of entry in New York and the New England States.

(g) ENFORCEMENT OF THE CAUSTIC POISON ACT

Appropriation, 1931	$ 26,700
Brookhart Act adjustments	90
Total, 1931	26,790
Budget, 1932	27,050
Increase	260

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase W.F.	Increase U.A.S.
Enforcement of Caustic Poison Act	$ 26,637	$26,790	$ 27,050	$ ----	$ 260

The increase of $260 is submitted for the following purpose:

$260 Under-average Salary Grade Adjustments.

Activities under Appropriation for Enforcement of Caustic Poison Act

To provide for the expenses in connection with enforcing the Caustic Poison Act (Mar. 4, 1927, 44 Stat., 1406-1410; U.S.C. Supp. 1, 73-75). The Caustic Poison Act imposes upon the Department the obligation of seeing

that the large number of preparations containing caustic or corrosive substances and sold in interstate or foreign commerce for household use are correctly labeled with the common name of the substance, with the word "Poison", with directions for treatment in case of accidental personal injury, and with the name and place of business of the manufacturer, packer, seller or distributor. To enforce this Act, samples must be collected from the products determined by chemical analysis, and such tests made as will establish whether any or all of the ingredients are caustic or corrosive, and whether the directions given in case of injury are correct and adequate.

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Note:- Also see Miscellaneous Section for "Services to other Departments".

INTERCHANGE OF APPROPRIATIONS

There is no change in the provisions of this paragraph which gives the Department authorization of the greatest value when emergencies arise.

It allows not to exceed 10 per centum of the foregoing amounts for the miscellaneous expenses of the work of any bureau, division, or office herein provided to be available interchangeably for expenditures on the objects included within the general expenses of such bureau, division, or office.

As called for in the proviso, a statement of these transfers for the fiscal year 1930 will be found in the Budget under this item.

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MISCELLANEOUS

Work for other Departments

The Budget contemplates continuation of this item which authorizes the Department of Agriculture to render services, such as inspections, analyses, and tests of food and other products, to other government agencies upon request, with reimbursement or transfer of appropriations to the Department of Agriculture in such amounts as may be necessary for the performance of the work. Services of the character indicated are rendered to the Army, the Navy, the Marine Corps, the Post Office Department, and other government agencies. This provision is of vital importance to the most advantageous use, for the benefit of the government as a whole, of the various expert services which the Department of Agriculture is in position to render.

EXPERIMENTS IN LIVESTOCK PRODUCTION IN SOUTHERN UNITED STATES

Appropriation, 1931	$48,500
Budget, 1932	43,880
Decrease	4,620

Project	Project Statement: Expended 1930	Estimated 1931	Estimated 1932	Increase or Decrease: W.F.	U.A.S.
Experiments in livestock production in the sugar-cane and cotton-growing districts of Southern United States	$ 56,500	$48,500	$ 43,880	-$5,000	+$380

The net decrease of $4,620 consists of a decrease in working funds of $5,000, due to a non-recurring item for a water supply system, and an increase of $380 for Under-average Salary Grade Adjustments.

Activities under this appropriation

Experiments are carried on with beef cattle, dairy cattle, and swine to find out the best methods of handling them under the conditions in the Gulf Coast Region and with the feeds available--the latter including southern pastures and especially the by-products of the cotton, rice, and sugar industries. Some work is done with horses and mules, using a purebred jack as sire.

Passenger-Carrying Vehicles.

An increase of $50,000 is requested in the amount made available from the lump-sum appropriations of the Department for the purchase of motor-propelled and horse-drawn passenger-carrying vehicles necessary in the general conduct of field work, and an increase of $10,000 in the special authorization for such purchases in connection with the construction and maintenance of national-forest and other roads constructed under the Department's supervision.

The first increase will permit the replacement of 107 old passenger-carrying units and 21 trucks, and the following additions to the Department's fleet:

Bureau of Plant Industry	40
Bureau of Animal Industry	28
Forest Service	26
Bureau of Entomology	14
Bureau of Agricultural Economics	13
Plant Quarantine & Control Administration	11
Bureau of Biological Survey	8
Food and Drug Administration	4
Bureau of Chemistry & Soils	4
Bureau of Agricultural Engineering	3
Office of Experiment Stations	1
Total	152

The additional vehicles will be used in various sections of the country to reduce the cost of necessary special transportation now being provided under commercial rentals or by reimbursing employees at mileage rates for use of their personally-owned cars.

The second increase is requested in connection with the second proviso, the wording of which has been changed by elimination of the replacement basis for cars used on highway construction work. This basis imposes a limitation which must ultimately be abandoned with expansion of the road work. Moreover, although planned acquisitions during the fiscal year 1932 will not enlarge the road fleet to the total of equipment transferred from the War Department during the period 1918-1924, estimates conditioned upon replacement, involving as they do the connecting of each new acquisition with a specific item of discarded equipment, have become increasingly complicated.

Mileage Rates for Motor Vehicles

The Budget contemplates continuation of this item which authorizes use of employee's personally owned motor vehicles for official business where the expenses of travel and administration can be reduced thereby, at rates and under the conditions specified in the Act.

COLLECTION OF SEED GRAIN LOANS

Appropriation, 1931	$ 90,000
Brookhart Act Adjustments	320
Total, 1931	90,320
Budget, 1932	125,000
Increase	34,680

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Collection of Seed Grain Loans	$8,940	$90,320	$125,000	$34,680

The increase of $34,680 is needed for anticipated collection expenses during 1932 on the uncollected loans estimated on July 1, 1931, to be between $4,000,000 and $5,000,000 of which approximately $2,500,000 will be outstanding on the loans of 1929 and 1930.

The appropriation for collection of seed grain loans for 1931 was for the purpose of collecting seed loans made in the northwestern States in 1921 and 1922, in New Mexico in 1924, in Florida in 1926, and in the southeastern States in 1929. While considerable amounts remain unpaid in these states, for the most part the delinquent borrowers cannot be reached or are unable to make these payments, particularly on loans made prior to 1929. The Department is able to obtain security in the form of crop mortgages only as the borrower voluntarily gives it. For this work a comparatively small appropriation is needed.

The necessity for the increase recommended lies in the fact that under the Act of March 3, 1930, an appropriation of $6,000,000 was made for loans to farmers in storm, flood and drought stricken areas of the southeastern States, central States, northwestern States and New Mexico. Out of this appropriation, approximately $4,600,000 was loaned in the spring of 1930, and approximately $700,000 has been loaned this fall to farmers in the States of Florida, Virginia, Alabama, Missouri and Oklahoma.

Collection on the spring loans to October 31, 1930, amount to approximately $2,000,000. The collection expenses for this fiscal year are being paid out of the $6,000,000 appropriation and the regular $90,000 appropriation for 1931. The estimated expenditures during the fiscal year 1931 for collection of loans amount to $235,320. A very high percentage of the loans made in 1929 in the southeastern States was repaid during the fiscal year of 1930 out of the 1929 crop, but it is estimated that a much larger part of the 1930 loans will remain unpaid at the end of the fiscal year, to be collected during the fiscal year 1932, than in the case of the

1929 loans a year ago.

Some effort is still being made to collect loans made in 1921, 1922, 1924, and 1926, although most of the expenditures during this fiscal year out of the special appropriation for collection of seed loans will be for collections of loans made in 1929. These loans were made in six southeastern States and by far the larger portion in the three States of South Carolina, Georgia, and Alabama. Loans in 1930 were made in fourteen States including not only the six southeastern States, but also Indiana, Illinois, Missouri, Oklahoma, New Mexico, Minnesota, North Dakota, and Montana. While comparatively few loans were made in any except the last two of these eight States, the wide area over which these loans were spread makes collection expenses heavy in comparison with returns. It is probably that collection this year of loans made in North Dakota and Montana will be light because of crop failures, etc. and the increase in the appropriation is in part for the purpose of collecting these loans during the fiscal year 1932.

Activities under this Appropriation

This appropriation provides for the force engaged in collecting the various seed loans which have been authorized by Congress from time to time. Field offices are maintained at Columbia, South Carolina, and Grand Forks, North Dakota.

A series of four tables setting forth the facts with respect to the various loans and their collections is shown on the pages which follow.

TABLE I

RECORD OF SEED LOANS AND COLLECTIONS

Loans	Amount Appropriated	Amount Loaned	Collections to June 30, 1930			
			Principal	Per cent collected	Interest	J
Act of March 3, 1931 (N.W. Sts.)	$2,000,000	$1,957,407.20	$1,358,733.57	69.4	$122,648.19	
Act of March 20, 1922 (N.W. Sts.)	1,500,000	1,480,106.69	1,137,944.48	77.0	60,481.33	
Act of April 26, 1924 (New Mexico)	1,000,000	413,983.15	276,230.45	66.7	23,142.36	
Act of February 28, 1927 (Fla.)	250,000	244,204.68	108,094.64	44.3	11,605.71	
Act of February 25, 1929 (S.E.Sts.)	6,000,000	5,758,650.34	4,580,683.67	80.0	131,225.57	1
Act of March 3, 1930 (N.W., C.S., S.E. Sts. and New Mexico)	6,000,000	5,312,136.00	- - *	- *	- - *	
TOTALS	$16,750,000	$15,166,488.06	$7,461,686.81*		$349,103.16*	$2,

*No statistics available for 1930, loan as of June 30, 1930. Payments due October 1, 1930. Estimated collections made on 1930 loan from July 1, to November 1, 1930, $2,000,000.

TABLE II

COLLECTIONS DURING FISCAL YEAR 1930
(Included in amounts shown in Table I)

LOANS	PRINCIPAL OUTSTANDING JULY 1, 1929	PRINCIPAL	INTEREST	TOTAL
Act of March 3, 1921 (N.W. Sts.)	$ 600,213.08	$ 1,539.45	$ 686.61	$ 2,226.06
Act of March 20, 1922 (N.W. Sts.)	342,162.21	1,019.98	571.62	1,591.60
Act of April 26, 1924 (New Mex.)	137,752.70	8,324.81	1,708.41	10,033.22
Act of February 28, 1927 (Fla.)	140,507.41	4,397,37	1,383.61	5,780.98
Act of February 25, 1929 (S.E. Sts.)	5,758,650,34	4,580,683.67	131,225.57	4,711,909.24
Act of March 3, 1930 (S.E., C.S., N.W. Sts. and New Mex.)	4,612,136.00	- - *	- - *	- - *
TOTALS	$11,591,421.74	$4,595,965.28*	$135,575.82*	$4,731,541.10*

*No statistics available for 1930 loan as of June 30, 1930. Notes due October 1, 1930.

TABLE III

COLLECTIONS DURING FIRST QUARTER FISCAL YEAR 1931
(July 1 to September 30, 1930)

LOANS	PRINCIPAL	INTEREST	TOTAL
Act of March 3, 1921 (N.W. Sts.)	$51.33	$39.67	$91.00
Act of March 20, 1922 (N.W. Sts.)	17.30	8.00	25.30
Act of April 26, 1924 (New Mex.)	333.50	79.11	412.61
Act of February 28, 1927 (Fla.)	121.45	13.81	135.26
Act of February 25, 1929 (S.E. Sts.)	16,439.93	1,904.78	18,344.71
Act of March 3, 1930, (S.E., C.S., N.W. Sts., and New Mex.)	865,440.13	*78,862.27	944,302.40
TOTALS	$882,403.64	*$80,907.64	$963,311.28

*Of this amount $76,723.33 represents interest deducted in advance to October 1, 1930, on loans made in the Southeastern States.

TABLE IV

EXPENDITURES OF DEPARTMENT OF AGRICULTURE
ON SEED LOANS

FISCAL YEAR	AMOUNT LOANED	ADMINISTRATION OF LOANS (PLACING AND COLLECTING)	AMOUNT COLLECTED ALL LOANS PRINCIPAL AND INTEREST
1921	$ 1,957,407.20	$ 15,000.00	$ - -
1922	1,480,106.69	44,359.78	707,873.79
1923	- -	74,542.26	1,554.072.96
1924	- -	30,345.68	176,419.83
1925	413,983.15	33,751.36	360,989.07
1926	- -	22,287.98	80,381.28
1927	244,204.68	20,169.81	116,823.45
1928	- -	17,426.98	58,163.52
1929	5,758,650.34	59,494.00	25,908.58
1930	4,612,136.00	114,777.00	4,730,157.49
Estimated - 1931	- -	235,320.00	- - *
Estimated - 1932	- -	125,000.00	- -
TOTALS	$ 14,466,488.06	$ 792,474.85	$ 7,810,789.97

*Estimated collections made on 1930 loan from July 1, to November 1, 1930, $2,000,000.

Special Corn Borer Research

Up to and including the fiscal year 1931 funds have been made available under this item by reappropriation of part of the unexpended balance of the special corn borer appropriation contained in the Joint Resolution, approved February 23, 1927. As the unexpended balance has gradually been reduced by these annual reappropriations the various agronomic, engineering and other non-entomological research projects relating to the corn borer situation have been provided for under the applicable bureau items, $85,000 being so transferred in 1931 - $75,000 being added to the sub-appropriation for Agricultural Engineering Investigations, Bureau of Public Roads and $10,000 being added to the sub-appropriation for Animal Husbandry Investigations, Bureau of Animal Industry, in order to reduce the reappropriated item to $125,000 the amount of the unexpended balance remaining available for 1931.

As the unexpended balance of the special appropriation of 1927 will be practically exhausted by the end of the fiscal year 1931, the special item is omitted and transfers of the projects now carried on the $125,000 reappropriation are proposed in the Budget for 1932, as follows:

Transferred to	Amount
Bureau of Chemistry and Soils:	
Agricultural chemical investigations (economic utilization of cobs, stalks, and other corn waste)	$12,000
Insecticide and fungicide investigations (investigation of new spray materials and repellents for use in corn-borer control)	18,000
Total	$30,000
Bureau of Plant Industry:	
Cereal crops and diseases (corn cultural and breeding investigations, with special reference to areas infested with the corn borer)	$25,000
Forage crops and diseases (studies in the utilization of forage crops as substitutes for corn in regions where the borer may make corn culture unprofitable)	30,000
Total	$55,000
Bureau of Agricultural Economics:	
Farm management and practice (studies of adjustments in systems of farming, livestock production, and other adjustments made necessary by corn-borer infestation)	$40,000
Total	$125,000

Agricultural Investigations in Cooperation with South Carolina Experiment Station.

Omission of this appropriation as a special item is proposed in the budget for 1932. Continuation of the work at this station on the same basis as handled by allotments during the current year is estimated for under the following regular items for 1932:

Transferred to	Amount
Bureau of Dairy Industry	
Sub-appropriation: Dairy Investigations	$21,350
Investigational work in dairy cattle, breeding, feeding, and management, for transmitting uniformly high production, and feeding and management practices peculiar to the Sandhill region, including studies of the comparative carrying capacity of various grasses and the comparative value of roughages.	
Bureau of Plant Industry	
Sub-appropriation: Forage Crop Investigations ...	$ 8,675
The forage crop work involves the testing of varieties of forage crops best adapted to the Sandhill region from the standpoint of soil improvement and for feeding purposes.	
Bureau of Chemistry and Soils	
Sub-appropriation: Soil Fertility	$ 9,975
The soil fertility work includes chemical investigations on the soils and studies of the changes in organic matter as influenced by cropping systems, including analyses of the crops grown. Experiments are also conducted to determine the fertilizer requirements of the soils of the Sandhill region.	
Total	$40,000

NATIONAL ARBORETUM

This item is submitted in the Budget under "Bureau of Plant Industry" for 1932, as a separate sub-appropriation of "Salaries and General Expenses" the work being under supervision of the Chief of that bureau.

SOIL EROSION INVESTIGATIONS

Appropriation, 1931.....	$185,000
Budget, 1932	255,000
Increase.....	70,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Allotment to Bureau of Chemistry and Soils:				
Soil Erosion Investigations	$106,657	$155,000	$205,000	$50,000 (1)
Allotment to Forest Service:				
Erosion-Streamflow Investigations-				
California Forest Experiment Station, headquarters at Berkeley, Calif.....	4,900	5,000	15,000	10,000 (2)
Intermountain Forest and Range Experiment Station, headquarters at Ogden, Utah.....	4,900	5,000	10,000	5,000 (3)
Lake States Forest Experiment Station, headquarters at St. Paul, Minn.....	4,950	5,000	5,000	---
Southwestern Forest and Range Experiment Station, headquarters at Tucson, Ariz.....	4,950	5,000	10,000	5,000 (4)
Southern Forest Experiment Station, headquarters at New Orleans, La.....	9,800	10,000	10,000	---
Totals	$136,157	$185,000	$255,000	$70,000

(1) The increase of $50,000 for the Bureau of Chemistry and Soils is for the establishing of two additional soil erosion stations.

(a) Investigations have shown that there are eighteen major soil regions in the United States that are highly susceptible to erosion. Thus far six stations have been established, and one is in course of construction, making a total of seven, located at Guthrie, Okla., Temple, Tex., Hays, Kans., Bethany, Mo., Statesville, N. C., Tyler, Tex., and Pullman, Wash. The objectives are to determine accurately the conditions under which soil erodes, the underlying causes, the possibility of increased absorption of rainfall upon various types of soil, to devise means of conserving moisture and methods of reducing erosion to a minimum and to develop a comprehensive program upon the subject of soil erosion for the entire United States.

(b) The plan of the Department will be:

To establish soil erosion stations in the major soil regions of the United

States which are highly susceptible to erosion, upon which careful accurate investigations of the problems can be made.

(c) Cooperation:

These investigations are carried on in cooperation with the Division of Agricultural Engineering, Bureau of Public Roads, the Forest Service, state institutions, and with other organizations. The Bureau of Chemistry and Soils, in cooperation with the Division of Agricultural Engineering, makes reconnoissance surveys of eroded areas, measures losses, and studies the effectiveness of different systems of terracing, cropping and other control measures. The Forest Service work is confined to range and forest lands with special reference to the effect of natural cover in preventing erosion and to reduction of flood damage.

Activities under allotment to Bureau of Chemistry and Soils from Appropriation for Soil Erosion

Damage from soil erosion includes the removal of rainwash of the rich surface layers of soil with the consequent reduction of productivity, the silting of streams, reservoirs and irrigation ditches and the destruction or severe impairment of alluvial lands by overwash of sand and gravel.

The objectives of these investigations are to determine accurately the causes of soil erosion; the possibility of increasing the absorption of rainfall upon various types of soil; to devise means to preserve the soil and to prevent or control destructive erosion; to conserve the rainfall by terracing or by other means, and to develop a comprehensive program of soil erosion for the entire United States.

Active determinations were made of the run-off of water, the fertilizer constituents lost and the actual soils removed by erosion under controlled conditions. Experiments were carried on with different types of terracing and other means of preventing erosion such as cover crops, methods of handling the soil, etc. The best methods developed for any locality are recommended for use. Already considerable acreage in the neighborhood of the older established stations is being controlled through methods recommended by the Department.

The increase of $20,000 for the Forest Service is submitted for erosion-streamflow investigations on forest and range lands as follows:

(2) $10,000 to determine the influence of chaparral, brush, and forest cover upon streamflow and erosion and for the determination of the most effective methods of managing watersheds for the maximum yield of water for irrigation and urban needs, by the California Forest Experiment Station.

(a) Water is the most valuable natural resource in California, because agriculture is wholly dependent upon irrigation. There is insufficient water in the State to irrigate the available tillable land. The water supply problem is probably more acute in the southern two-thirds of the State than in any other section of the country and is being critically accentuated by increasing population.

This section has two-thirds of the arable land and three-fourths of the population and wealth of the State, and receives but one-third of the total rainfall. In some valleys the water table has been falling steadily under increasing rural and urban demands, and water is now being pumped from wells as deep as 460 feet, reaching the economic limit of supply in many places. It is doubtful if additional supplies from the Colorado River will leave much of a margin above urban demands for further agricultural growth. As there are no new sources of supply available save by transferring water long distances at great cost, the crucial problem is to convert to human use all the water locally received. It is vitally important, therefore, that all of the watersheds in the California Mountains be so managed as to deliver a maximum of water in usable form.

Inseparably linked with the conservation of water supplies are the problems of flood and erosion control. There is every reason to believe that the amount of erosion has been increasing rapidly as the original vegetative cover has been disturbed or destroyed by fires and otherwise. Reservoirs are silted up, rich agricultural lands are completely buried and destroyed, silt-laden waters clog the interstices in the outwash fans at the foot of the mountains, and the flood flow, instead of penetrating and becoming available for later pumping, runs to the sea. Besides causing damages running into millions of dollars, single storms create floods which waste the only available source of increased water supply for several counties.

The Federal Government is particularly responsible because the major areas of producing watersheds involved lie within the National Forests.

(b) <u>The plan of the Department will be</u>:

To make intensive studies of two carefully selected and matched watersheds, one of which would later be denuded. Data would be obtained upon the influence of the cover on streamflow and erosion. The work would be carried on in the chaparral type of the southern portion of the State where conditions as to water supply and erosion are now most critical.

(c) <u>Cooperation</u>:

The work will be done in cooperation with the State and with several southern California counties which together will contribute funds at least equal to those furnished by the Federal Government.

(d) <u>Present work</u>:

The work under way with a $5,000 allotment from the erosion-streamflow item includes intensive studies of very small areas with both artificially controlled and natural conditions, of the effect of litter, grass, and other cover on erosion and runoff with different kinds of soils, gradients, rates of precipitation, etc. This work is an essential preliminary to investigations on larger

matched watersheds. The work will also be closely related to that under way with a $5,000 allotment from the appropriation for forest management investigations which is being used in a study of the recovery, succession, etc., of vegetative types in chaparral stands following forest fire in relation to erosion and runoff.

(3) <u>$5,000 for the investigation of erosion control and streamflow regulation by the Intermountain Forest and Range Experiment Station on the watersheds of irrigation and power streams.</u>

(a) On the Boise irrigation project in Idaho the summer streamflow has progressively declined since 1912 and threatens a water shortage and decreased crop production or additional expenditures for storage. Abnormal recent erosion, causing impoverishment of the soil and the silting of streams and storage reservoirs, has already taken place through depletion of the vegetative cover on extensive areas by drought and grazing. Fire, placer mining, and other influences may have contributed to the erosion and make the retention of the vegetative cover on the slopes still more important. A maximum possible summer run-off and minimum deposition of silt in the streams and storage reservoirs are essential since the Arrowrock and Deer Flat Reservoirs have only 457,000 acre-feet of storage for the 355,000 acres irrigated. The project supports nearly $55,000,000 of farm developments and approximately an equal value in other rural and urban developments. Every acre of the 1,700,000 acre watershed has a dependent investment in farm land alone of about $32. The watershed also furnished timber, range forage, mining and recreational values, all important in the prosperity of the region. The water users have asked that the Forest Service stop all timber cutting and greatly restrict the grazing on watersheds. They have agreed, however, to withhold their demands until authoritative answers can be determined by research, but urge that the research be undertaken immediately.

Excessive erosion is occurring on the watershed of the Colorado River within the Intermountain Region. The average annual silt load being carried through the Grand Canyon of the Colorado River is upwards of 137,000 acre-feet and that part of the Utah watershed is contributing more than its share of silt. Extensive mountain and foothill areas of the watershed in Utah have a fine sandy soil which erodes very rapidly when the protecting plant cover is thinned or depleted. The torrential nature of occasional summer rains makes it all the more necessary to maintain the maximum plant cover that is possible.

(b) <u>The plan of the Department will be</u>:

To replace the general survey now under way in the Boise watershed by intensive investigations which will determine concretely the influence of herbaceous, shrubby and tree growth of varying density,

of topography, and of character of precipitation, etc., on erosion and streamflow; also to make a survey of the part of the Colorado River watershed in Utah.

(c) Present Work.

$5,000 from the erosion-streamflow appropriation is being used for a general survey of watershed conditions on the Boise watershed of Idaho and for the analysis of climatic, stream gauging and other existing data bearing upon the influence of the vegetative cover upon streamflow and erosion. $4,500 from the appropriation from range investigations is being used for a study of range management upon the Boise watershed with particular relation to the management necessary to maintain the cover which the streamflow and erosion investigations have so far shown to be necessary.

(4) $5,000 for investigations of erosion control and streamflow regulation by the Southwestern Forest and Range Experiment Station on the watersheds of irrigation and power projects in Arizona and New Mexico.

(a) The depletion of the vegetative cover from drought and overgrazing is resulting in serious erosion and the silting of reclamation reservoirs, threatening the economic life of these projects. Extensive areas now support only one-fifth to one-third of the vegetation the soil is capable of producing. The breakdown of the vegetation has allowed the torrential rains of the region to tear away the rich top soil layer, reducing the productive capacity of the soil, and has started gullies and washes which are increasing in size and difficulty of control.

The Salt River Valley project is especially important. One-fifth of the population of Arizona lives in this valley. Nearly 300,000 acres are irrigated by the project. Over $250,000,000 of farm and urban property is dependent upon it. Over $30,000,000 in crops and livestock are produced annually. In 1928 $5,000,000 worth of power was produced. Every acre of the 3,700,000 acre watershed of the Roosevelt Reservoir, which is the main storage basin of the project, has a dependent investment in the valley of $67 and a yearly production value of over $9 in agricultural products and power. Water storage in years of high precipitation is required to meet the needs during extended dry periods. There has been considerable shortage of water for irrigation and power in recent years. Extensive pumping at high cost has been required during periods of low storage to make up the reservoir deficiency. The rapidity of the erosion is indicated by the fact that an average of half an inch of soil was removed from one check area on the watershed in eight months of 1928 with a relatively light rainfall. Practically all of the watershed is within National Forests and an Indian Reservation, and is hence a direct Federal responsibility.

In New Mexico, especially in the Elephant Butte Reservoir watershed, the situation is equally critical. By 1925, nine years after completing the dam, 231,735 acre-feet of storage had been taken up by silt, equal to 8.8 per cent of the original reservoir capacity. This was very greatly increased by last year's floods. Furthermore, short washes coming into the irrigated valley are doing enormous damage. It has been estimated that engineering control works to protect the Las Cruces area alone will cost $100,000, but that this will give only temporary relief unless vegetation capable of controlling the abnormal erosion can be established on the slopes.

(b) The plan of the Department will be:

To replace the work of the general character now under way, with investigations to determine under the dry, southwestern conditions of the Roosevelt watershed (a) what actually becomes of the rain and snow which falls; that is, how much runs off and when, how much percolates to supply underground sources of water, how much evaporates and how much is required to support the vegetation, and how this varies on the different soils and plant cover conditions; (b) what erosion of soil takes place under the different intensities of rainfall and run-off, and under the various soil and plant cover conditions, and how this is influenced by different degrees and character of use of the vegegation; (c) what vegetative cover encourages the maximum of storage water with the least silting; also to make a survey of conditions on the watersheds of other irrigation projects in the Southwest, such as Elephant Butte, Coolidge, etc.

(c) Present Work:

$5,000 from the erosion streamflow appropriation is now being used for general work on the erosion-streamflow problem, on the watershed of the Roosevelt Reservoir, and in the preparation of a report covering results so far obtained. $2,000 from the range investigations appropriation is being spent on studies of range management designed to obtain and maintain a vegetative cover which the erosion-streamflow studies so far made indicate to be necessary to maintain favorable watershed conditions.

Activities under allotment to the Forest Service from this Appropriation.

The general purpose of erosion-streamflow investigations on forest and range lands is to determine the relationship between different kinds and intensity of vegetative cover -- chaparral, brush, grass, etc. -- and erosion and streamflow, under different conditions of soil, topography, precipitation, etc. The purpose is also to determine the form and intensity of cover necessary to maintain satisfactory watershed conditions and, finally, to work out suitable remedial measures, such as reforestation and engineering works to check erosion which has already started.

The work consists of general surveys, of small scale tests under closely controllod conditions which break this very complex problem down into its factors and allow an evaluation of each of the factors separately and in relation to the others. Under many conditions the work must also be carried to moderate-sized duplicate watersheds, where relationships can be determined and then cover conditions on one watershed changed so that the effect of degree or intensity of cover may be determined. Specialized work along a number of additional lines is necessary before large watersheds can be studied effectively as a whole, including the water requirements of different classes of vegetation in different stages of its development, the silt-carrying capacity of streams, the silting up of reservoirs, etc. The following examples illustrate the character of the results which are being obtained:

Work in the Lake States indicated that the average maximum run-off per cent of precipitation under the conditions studied varied as follows: For forest -- 2.8%, wild pastures -- 7.2%, cultivated hay -- 17.7%, small grain and fallow -- 25.6%, corn fields -- 25.7%, and for seeded blue grass pastures -- 26.7%. Based upon the silt carried by streams it was estimated that in the neighborhood of 25,000,000 cubic yards of silt is carried annually into the Mississippi River by the Chippewa, Black, and Wisconsin Rivers from an area of approximately 10,000 square miles in the unglaciated portion of the southwestern part of Wisconsin. Intensive small scale work in California indicates that the removal of the forest litter may increase immediate surface run-off from three to thirty times, depending upon the character of the soil, intensity of precipitation, etc., and that erosion from bare surfaces may be increased from 50 to 6,000 times over that from litter-cover surfaces. Work in California has also shown that the destructive floods from watersheds without a satisfactory vegetative cover result from precipitation at a rate exceeding about six-tenths of an inch per hour even though this intensity is reached or exceeded for a few minutes only. A 60-acre area in Arizona with less than a 10-degree slope lost one-half inch of the surface layer of soil in less than a year.

FOREST ROADS AND TRAILS

Explanation of Change in Language: The changes in amounts and references to legislative authorizations are necessary to adjust the appropriations to the annual authorizations applicable.

In addition it is recommended that the language in the fourth proviso under the heading of "Forest Roads and Trails" be amended by changing the amount $1,500 to $2,500. This change will bring the limitation into agreement with that specified in the general introductory paragraph of the Forest Service section of the Appropriation Act. There has in the past been an occasional need for equipment depots costing over $1,500, and with increased road appropriations it is anticipated that such depots will be needed in the future.

The proviso authorizing the purchase of land and the purchase of construction of buildings, inserted in the fiscal year 1931, has been continued in the fiscal year 1932. The buildings used for equipment depots in the West are of a temporary character and should be replaced with permanent buildings. The 1931 Agricultural Act contained an authorization identical with that requested for 1932. Under the 1931 authorization it is expected that buildings of a permanent character will be provided in Bureau of Public Roads District No. 1, headquarters for which are at Portland, Oregon. The authorization requested for 1932 is to provide suitable permanent buildings for Bureau of Public Roads District No. 2 which has headquarters at San Francisco, California. It would not be feasible to have the equipment for these two districts handled at a central location.

Appropriation, 1931	$11,000,000
Budget, 1932	12,500,000
Increase	$ 1,500,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Forest Highways				
Construction and maintenance of forest roads of primary importance to States and counties	$4,778,519	$7,741,000	$9,500,000	$1,759,000

Project	Expended 1930	Estimated 1931	Estimated 1932	Decrease
Forest Road Development				
Construction and maintenance of forest roads and trails of primary importance to protection and utilization of the National Forests . . .	$3,136,341	$3,259,000	$3,000,000	$259,000
Totals.	$7,914,860	11,000,000	12,500,000	1,500,000

This increase is due to the increase from $7,500,000 to $12,500,000 in the amount of annual legislative authorization. Prior to the passage of the Colton-Oddie Act of May 5, 1930, (Public No. 179, 71st Congress) the annual legislative authorization had been $7,500,000. The Act referred to set the legislative authorization of $12,500,000 for the fiscal years 1931, 1932 and 1933. From the present indications, the actual expenditures during the fiscal year 1932 will equal the annual legislative authorization.

Activities Under This Appropriation

This appropriation, under the provisions of Section 23 of the Federal Highway Act of November 9, 1921, is made for forest roads and trails. It is divided into two parts, the Forest Highway Fund and the Forest Road Development Fund. The Forest Road System as planned includes 67,726 miles of road and 149,768 miles of trail. The road system when completed will provide a mile of road for 3,248 acres, or 5.07 square miles as an average. The Forest Highway Fund is expended for roads necessary to the Forests but of primary importance to the State, counties, or communities within, adjoining, or adjacent to the National Forests. The Forest Road Development Fund is appropriated and expended for roads and trails of primary importance to the administration, protection and utilization of the National Forests.

FEDERAL AID HIGHWAY SYSTEM

Appropriation 1931.....	75,000,000
Budget, 1932.....	125,000,000
Increase	50,000,000

Project Statement

Project	Expended 1930	Estimated 1931	Estimated 1932	Increase
Federal Aid Highway System	$77,893,575	$75,000,000	$125,000,000	$50,000,000

The increase of $50,000,000 in this item as compared with the appropriation of $75,000,000 thus far made (and carried in the Agriculture Appropriation Act) for the fiscal year 1931, is necessary in order to meet payments during 1932, estimated at $125,000,000, under the enlargement of the Federal Aid construction program as contemplated by the increased authorization in the Act approved April 4, 1930 (Public No. 90, 71st Congress

Activities under this Appropriation

This item provides funds for cooperation with the several States in the construction of the Federal Aid Highway System under the terms of the Federal Highway Act. This system comprises approximately 193,000 miles of the main highways of the country selected by the States and approved by the Secretary of Agriculture. Federal Aid road work was started under the Federal Aid Road Act in 1916. Up to November 1, 1930, provision had been made for the improvement with Federal Aid of 98,648 miles of highway.

From 1925 to 1930 authorizations were at the rate of $75,000,000 annually. Authorizations for the fiscal years 1931, 1932, and 1933 are at the rate of $125,000,000 annually under the provisions of the Act of April 4, 1930 (Public No. 90, 71st Congress). Under these authorizations the work is carried forward by the Secretary of Agriculture acting through the Bureau of Public Roads and funds are appropriated as required to make payments to the States.

MOUNT VERNON MEMORIAL HIGHWAY

Explanation: This item is not included in the 1932 budget as the $4,500,000 authorized by the Act approved May 23, 1928, has been appropriated.

FLOOD RELIEF, VERMONT, NEW HAMPSHIRE AND KENTUCKY

This item is being omitted as the appropriation will be sufficient to accomplish the purpose for which it was intended.

FLOOD RELIEF, MISSOURI, MISSISSIPPI, LOUISIANA AND ARKANSAS

This item is being omitted as the appropriation will be sufficient to accomplish the purpose for which it was intended.

FLOOD RELIEF, ALABAMA

Explanation: The language submitted is recommended to make available until June 30, 1932, the unexpended balance (estimated at $900,706) of the $1,660,000 already appropriated for the purpose of carrying out the provisions of the Act approved March 12, 1930 (46 Stat., p.84)

FLOOD RELIEF, GEORGIA AND SOUTH CAROLINA

Explanation: The language submitted is recommended to make available until June 30, 1932, the unexpended balance (estimated at $455,561) of the $1,311,628.50 already appropriated for the purpose of carrying out the provisions of the Acts approved May 27, 1930, (46 Stat., p.386) and June 2, 1930, (46 Stat., p.480).

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The End